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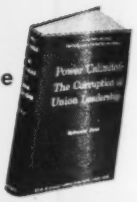

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Are You On A Merry-Go-Round?

CONSOLIDATED EDISON started a manager development plan that was called the "merry-go-round" by some who worked there. Its name came from the scheduled moving of men around in the company. The primary purpose was to acquaint promotable men with the work done in the several major functions of the business.

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You and I can enlarge our capacities to think. We can improve our abilities to look into our own futures. We can add to our experiences by learning from others.

Every member in S.A.M has had some experiences. Every speaker and every workshop leader has additional experiences. "Our collective knowledge is vast," says George A. Stetson, Editor-Emeritus of ASME, "but most of us are specialists in some narrow field of the total expanse of it. In the formation of value judgments, it is difficult for the specialist to curb the intellectual arrogance which interprets issues and solutions in the frame of reference of his specialty, or for him not to dismiss them as being unworthy of his interest because he is ignorant or impoverished in fields other than his own."

Actually, we don't have to learn the hard way. We can profit from the experiences of men who are in our fields of work. We can learn even more from those outside it. Broad knowledge is brought together for us to learn from in our S.A.M Chapter meetings. All this can give us many of the benefits of the merry-go-round without our having to get on it.

We may learn that we should begin to reshape and redirect our careers. On the other hand, we may confirm our opinions that we are now on the right tracks.

Either way, we will move ahead with fewer trials and errors. We will be more confident. We will know more about business and industry and the parts our work contributes to their successes.

Now is the time for us to build for our futures. Today is the best time to attend our S.A.M chapter meetings and take active parts in advancing our management skills. To the extent we do, we will be more satisfied with our achievements when that last whistle blows.

Phil Carroll
S.A.M National President
and
Professional Engineer
Maplewood, N. J.

The Theory And Practice Of Predetermined Motion Time Systems

by G. B. Bailey
Director
J. D. Woods & Gordon Ltd.
Toronto, Canada

SINCE World War II, many new and important techniques have become available to Industrial Engineers. The reception that has been given each new technique has followed traditional lines —immediate acceptance of that which appears to be satisfactory; a questioning attitude about that which appears to be incomplete or deficient or which is not fully understood.

Perhaps none of these techniques has evoked as much discussion, both pro and con, as the predetermined motion time systems. The attitude of one group has been that some parts of the theory around which these systems have been built are fundamentally in error and that the parts which are in error frequently combine to prevent the systems from producing acceptable results. The group supporting the predetermined time systems claim that they (the systems) do produce acceptable results. This group support their claim by pointing to the large number of successful applications in which predetermined time systems have been put to the most severe test—their use in developing standards for wage payment plans.

Having been closely connected with one of the predetermined motion time systems—Basic Motion Timestudy, or BMT—during both the development stages and the more than seven years that it has been in use, I belong to the latter group. However, I have some misgivings about placing one's entire support on the statement, "It works," correct as that claim may be. If the predetermined motion time systems work in by far the majority of instances in which they have been applied, these good results cannot be put down to chance. They must also have occurred for reasons that may be supported both by theory and by practical tests. These reasons are discussed here in some detail.

Before entering into this discussion I should make it clear that my experience with predetermined motion time systems has been almost entirely restricted to BMT and that my knowledge of the other published systems is, therefore, somewhat superficial. However, many of my subsequent remarks will be true, in general, of all systems. I am also aware that occasional unsatisfactory results have been obtained from these systems in situations where there was every reason to expect proper results. I do not intend to pass over these instances. Later in this paper they are discussed in some detail.

The Theory of Predetermined Time Systems

The predetermined motion time systems are all founded on the theory that manual activity may be sub-divided into readily identifiable units of motion and that the proper time for a given motion is the same regardless of where or by whom it is performed. The theory further holds that the proper time for a manual job is the sum of the predetermined times for the individual motions used in performing the job.

The separate parts of this theory are inter-related and the selection of a point from which to start the discussion is more a matter of convenience than of necessity. Initially, therefore, we may direct our attention to the statement that the proper time for a given motion is the same regardless of where or by whom it is performed. This statement implies, in part, that the proper time for a given motion will be the same whether the motion is performed in the office or the plant, at work or at play. To believe differently would be to suggest that a person uses his fingers, hands, arms and other body members differently at work than he does at play. It would suggest that he uses these body members differently in the office than he does in the plant, or that he changes his way of using them when he moves from one plant setting to another. It is difficult to believe that this would be so. If changes occur from one setting to another, they are more likely to be caused by changes in the degrees of difficulty between comparable jobs performed in different settings than by the settings themselves.

For the purpose of this discussion, difficult jobs are those that require a high degree of muscular and visual care. Such care occurs in grasping small objects, in fitting objects together where tolerance limits are close, and in jobs that require handling heavy objects and thus the use of more than ordinary muscular control. All of the predetermined time systems recognize the variable nature of muscular and visual controls and have established procedures,

as part of the application technique, for dealing with them. I shall refer specifically to one aspect of muscular control to illustrate how the time to perform a motion changes as the motion becomes a more difficult one to perform. The single example will serve to indicate how other aspects of muscular control affect the time to perform motions. The role of visual control is referred to specifically later in the paper. The explanations will refer to the methods used in BMT.

A Single Time for Each Motion

One of the most common types of manual motion ends in a placing action. In its most straightforward form it involves no more than moving the hand back and forth between two positions on top of a desk, the action ending in each arm motion with the fingers touching the top of the desk. In short, the fingers are placed upon the top of the desk.

If this action is repeated a given number of times without interruption over a specified distance, the performance timed and evaluated by any of the usual pace rating procedures to arrive at a net standard time,[1] within the limits of experimental error, the same standard time for a single motion will be found whether the act is performed by a tall person or a short person, a thin person or a stout person, a male operator or a female operator.

This motion may be made more difficult by the introduction of one additional requirement. Each terminal point may be marked with a ½-inch circle and a pointed lead pencil moved back and forth between the circles, each motion ending with the point of the pencil placed entirely within a circle. If this act is timed and rated in the same manner as the earlier one, the same uniform results will be obtained. In this case, however, the standard time for a single motion will be slightly higher because of the extra muscular control required to end the motion. That is, the second motion pattern is slightly more difficult to perform than the first one. If the ½-inch circles are now replaced with ¼-inch circles and the experiment is carried out once again, the same uniform results will be found for a third time. As would be expected, the standard time for a single motion to a ¼-inch circle will be higher than the standard time for a single motion obtained from either of the previous tests. From a series of tests such as those just described, it may be seen that the standard time for a given motion, requiring a specified amount of muscular control in the ending action, will be the same regardless of the physical characteristics of the person performing the motion. It may further be seen that changes in the degree of muscular control required in the ending action cause changes to occur in the standard time for the motion.

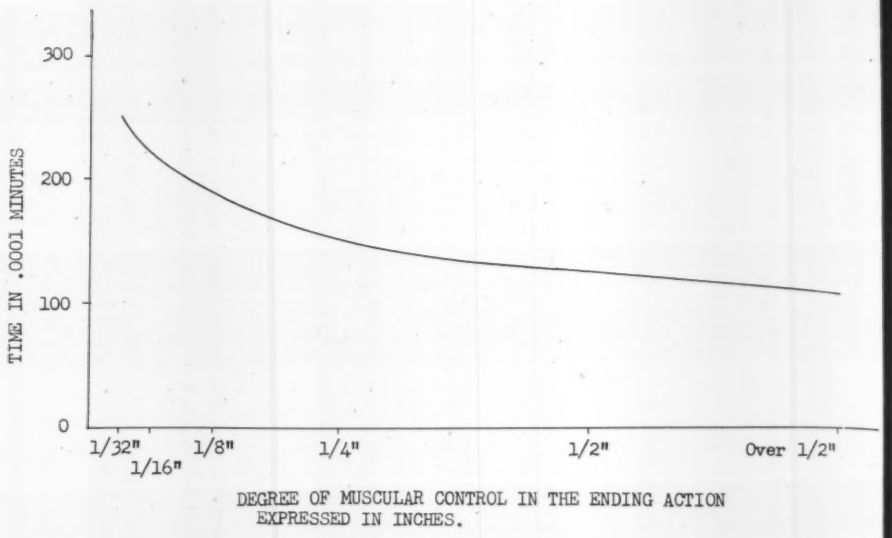

FIGURE 1. Graph showing the relationship that exists between the time to perform a given motion and the degree of muscular control required in the ending action, expressed as the limits, in inches, within which the point of the pencil must be located.

Examination of the results of a series of tests covering the performance of a motion of given length carried out to place the point of a pencil in turn within circles of 1-inch, ½-inch, ¼-inch, ⅛-inch, 1/16-inch and 1/32-inch will show that an orderly relationship exists between the time to perform the motion and the degree of muscular care required in the ending action. This relationship is shown in Figure 1.

The Role of Performance Rating

The forthright statement concerning the results that will be obtained from the foregoing series of tests may well cause the reader to wonder whether too much reliance has been placed on pace rating procedures. I am fully aware of the controversy that centers around this subject and would be happy to sidestep the issue if it were possible to do so. Obviously, this is not possible. For a set of time data to be worth its salt, it must relate to some specified level of performance, otherwise the data will be full of inconsistencies and will be virtually worthless.

The level of performance to which the time data refer is of secondary importance, for the purpose of this discussion. A body of time data that is consistently 30% different than another body of time data (or another timing procedure) may be brought into agreement by applying a 30% factor.

The controversy about performance rating, for the most part, centers more around the ability to apply the rating consistently than about the need for applying a rating factor. Most people who have commented on rating procedures, whether to support them or to oppose them, agree that the ability to arrive at consistent time standards is improved if the observer is able to see the job performed in exact detail at several different

[1] *In BMT, the term standard refers to the commonly used standard work pace of 3 miles per hour for walking and .50 minutes to deal a deck of 52 playing cards into four bridge hands. BMT times do not include allowances for rest or personal requirements. These need to be added according to the requirements of the job.*

Any doubtful person will recognize that real economic security cannot be provided by others, especially that it cannot be furnished by the company alone. Only the consumer can guarantee security of employment.

HUMAN MOTIVATION FOR COST REDUCTION AND METHODS
by Jerome Barnum

levels of work pace. This provides him with an opportunity to cross-check his ratings before he makes a final selection. In theory at least he expects to find that the ratings he has assigned to the different levels of work pace will produce the kind of uniform results shown in Figure 2.

Observed Time in Minutes	Rating Factor as a Percentage of Standard	Resulting Standard Time in Minutes
.100	120	.120
.090	130	.117
.110	110	.121

FIGURE 2. Standard Times for an Element of Work, Obtained From Rating Three Different Levels of Work Pace.

The opportunity to cross-check ratings in the manner shown, unfortunately, rarely occurs in time study work. This is not to deny that an operator's work pace changes in the course of a study. Almost always, however, such a change is accompanied by a change in the method of doing the work. The method change may be so marked as to be observable, or it may be so slight as to go undetected by the observer. Changes in method, whether or not they are accompanied by changes in work pace, make the cross-checking of ratings virtually impossible. This subject is discussed in greater detail in the book entitled *Basic Motion Timestudy*, by Bailey and Presgrave, to be published by McGraw-Hill Book Company, Inc.

By comparison, tests involving motion patterns of the kind described earlier may be performed through a wide range of work paces without introducing any change in the method of performing the motions. Thus, the motion used to reach back and forth to touch marks on top of a desk may be performed in exactly the same way at a relatively slow pace, at relatively fast and at moderate pace.

WHEN slow, medium and fast performances of this motion pattern are timed in turn and pace-rated, results that show the measure of agreement set forth in Figure 2 may be expected. An additional step may be taken to ensure that occasional occurrences of inconsistent pace rating do not go undetected. The motion pattern under study may be performed over more than one distance interval and the results plotted on a graph for examination. Final selection of a standard time will not need to be made until the results from a series of tests show a high degree of consistency.

The procedures described thus far will produce results to support the premise that the standard time for a given motion is the same regardless of where it is performed or who performs it. Stated somewhat differently, this implies that the standard time for each motion of a job may be known in advance and is therefore not influenced by the motions with which it is associated. In short, each motion is an entity.

The theory supporting the foregoing statement is that a basic unit of motion always ends when its purpose is accomplished as, for example, in grasping an object or in placing an object in position. Throughout the course of the motion, muscular control is directed toward completing the motion (including its ending action) as required. No muscular control can be directed toward carrying out the motion that is to follow until the motion in progress is completed. As soon as it is completed (and the body member involved is at rest), muscular control may be applied immediately to start the next motion. By the application of this theory, there can be no overlap in the use of muscular control between two successive motions. However, in performing a sequence of motions, the characteristics of a given motion may be influenced, at times, by the motions with which it is associated. The influence of the associated motions is such as to change the class of motion and therefore its time rather than to change the time for a given class of motion. In BMT, for example, the performance of a motion to carry out a grasping or a placing action may in one instance be delayed through being in the middle of a series of motions all requiring close visual attention. In another instance the same motion may be the only one in a series of motions to require visual attention, and therefore it will not be delayed. In the first instance, the standard time for the motion in question will be some 10% greater than in the second instance because of the circumstances under which visual attention is applied, a difference that is imposed by the associated motions.

For readers who are not completely familiar with it, the BMT application technique recognizes the effect of visual attention on the time to perform motions. Whenever the eyes are required to direct a motion to its end point but cannot be focussed on the end point before the motion begins, the performance of the motion is delayed and the time for it is increased. Thus when every one of a series of motions require the performer's eyes to direct it to its end point, the time to perform every motion except the first one of the series will be increased by the visual attention. Only the first motion situation referred to above falls into the category of a motion delayed by visual direction. In preparing an analysis, then, the motion in the first situation would be classified as a visually directed motion while in the second situation it would be classified as a non-visually directed motion and would have a lower standard time.

FURTHER evidence to support the theory of the unique quality of motions will be found by considering the additive qualities of a body of motion time data. Tests similar to those already described but involving more than a single motion may be designed, timed and rated, and the resulting standard time compared with a standard time for the motion sequence developed synthetically. One arrangement of different motions may be put together readily to follow a triangular path, with each corner of the triangle marked by a circle of different size. For example, one circle could be 1-inch in diameter, a second one ½-inch in diameter and the remaining one, ¼-inch in diameter. The legs of the triangle could be of equal or of unequal length. This arrangement will provide a sequence of 3 different motions. The timing procedure could be carried out to yield a standard time for moving a pointed pencil once around the triangle.

A standard time from stop watch study of the motion sequence will be in agreement with a standard put together from the previously prepared motion time data. Other motion sequences, including studies of factory type operations will produce the same agreement of results, thereby providing evidence that the sum of the individual motion times is equal to the cycle time for the motions.

Variations in the Pace of Motions

Clear as this evidence is, it does not explain why analysis of a film record of a job will produce individual motion

times that are vastly different in some instances from the predetermined times for the motions in question, even when standard times for the cycle arrived at by time study and by synthesis are in close agreement. This seemingly paradoxical situation actually provides a clue to its meaning and significance. It suggests the possibility that a person does not perform each motion of a series of motions at exactly the same work pace, under any circumstances. It provides no way of testing this hypothesis, however, and one must turn for confirmation to a situation that may be tested. Analysis of a film record of a single motion performed over and over without interruption and as nearly as possible at the same work pace will show that the time to perform successive identical motions varies substantially. The variation for simple motions such as reaching back and forth to touch the top of a desk amounts to some ± 5% to 10% from the average. As may be expected, the variation is greater for the more difficult motions involving more muscular control, ranging from the ± 5% to 10% mentioned above to some ± 15% and even higher in some instances.

THE significance of these results in shaping the theory of motion dependence cannot be ignored. Here is a situation that should lend itself to uniformity of work pace and of time if such a state may be obtained. A single motion is involved; the operator consciously tries to maintain a uniform pace. It is hardly to be expected that an operator, working in the factory in his usual way and with little or no cause to maintain uniform pace will, in fact, produce results that are more uniform than those mentioned. Actually, it seems reasonable to expect that variations in pace from motion to motion in an actual work situation will be even greater than those found under more or less ideal situations.

In the light of these findings, the theory supporting the independence of motions is further strengthened. The variations in the time for individual motions that are found to exist when a comparison is made between motion times obtained from film analysis and those obtained from previously prepared time data only highlight a phenomenon of manual activity. People do not work at a uniform pace from motion to motion but rather they vary both upward and downward from an overall average pace. This variation from a central or average pace may thus be explained as an inherent part of manual work rather than as evidence of the inter-dependence of motions.

Reasons for Unsatisfactory Results

By now the reader will find more justification for the statement that the predetermined time systems merit support because they produce acceptable results. However, the reasons set forth thus far do not explain why there are on record a number of instances in which unsatisfactory results have been obtained from these systems.

There are, indeed, only two reasons why unsatisfactory results from predetermined time systems can occur.

1. Lack of precision in the time data.
2. Lack of experience and skill in applying the time data.

I have no knowledge to suggest that any complete body of time data now in general use contains gross inaccuracies and in fact there is no reason for such a condition to exist. If the timing process in the research program is carried out carefully, if the factors to be isolated and timed are identified clearly and if the pace rating procedures are carried out so as to virtually assure that improper ratings are detected and discarded (by processes similar to those outlined earlier)—if all these steps are followed, the resulting time data should be reliable.

In my experience, unacceptable results have been caused entirely from the second reason set forth above. I know of no instances where improper results have been obtained from BMT when the user was thoroughly trained. I know of several instances where unacceptable results were obtained from untrained or from partly trained users. I believe that, generally speaking, this has been the experience of the proponents of the other predetermined time systems.

This urge to try to use a predetermined time system without benefit of full training is a natural one. The systems themselves appear to be straightforward and easy to apply. The time data are presented in orderly tables that literally invite one to use them.

Unfortunately this implied simplicity frequently produces an unexpected source of criticism of the systems. When unacceptable results are obtained by the untrained user, he becomes critical of the system. In the understandable belief that the system is as straightforward to apply as the appearance of the data tables suggest, he reasons that the poor results come from poor data rather than from poor application of the data.

This is a natural attitude. Furthermore, it raises important questions. If the application of the time data is not as straightforward as appears to be the case, why are the motion time data set forth in such a manner? Is this not, to a certain extent, a misrepresentation of the facts?

Actually, the arrangement of the time data is primarily a matter of convenience. In BMT, for example, the time data may be printed on a card that will fit readily into a pocket wallet, yet the time tables contained on it are capable of producing standards for an almost endless variety of motions. The characteristics of the technique and of manual motions that lead to this method of presenting the time data are discussed below.

The Number of Fundamental Arm Motions

There are, in fact, only a limited number of fundamental motions that body members perform. In BMT, no more than three fundamental arm motions are recognized, although each one may appear in an almost endless number of variations and combinations. Each fundamental class of motion is identified by the way it ends.

One class of motion ends by impact. It is the hammering-type motion. Another class of motion ends freely in the air. It covers tossing actions and many preparatory actions such as those used in the upstroke in hammering. The third class of motion ends in a grasping or placing action. It is by far the most common class of motion and covers the placing-type motion referred to in this paper.

A little reflection will confirm the fact that motions appearing to be different at first glance are often found to be made up of characteristics that are fundamentally the same. For example, reaching from one point on the top of a desk to touch another point on the top of the desk is fundamentally the same as carrying an eraser (already grasped) from one point on top of the desk to another point, placing it at the new point on top of the desk. It is also the same, fundamentally, as picking up a hammer (already grasped) at one point on a work bench, carrying it to another point and placing it at the other point, or simply carrying the hammer already held in the hand and placing it on top of the work bench. Such things as the distance moved

and the weight of the object will influence the time for the motion but they will not change the fundamental class of motion. Similarly the motions used to reach and grasp in turn an object the size of an apple and one the size of a pea will also be the same fundamentally. Each will end in a grasping action. The degree of muscular control required to complete the grasping action will be very different in each case and therefore the two actions will require vastly different standard times but the fundamental characteristics of the motions remain the same.

Variations Within Fundamental Arm Motions

The arrangement of the data in the time tables also tends to obscure their versatility. These tables are capable of yielding time standards in great detail. In BMT, for example, the time data are capable of yielding upwards of twelve different standard times for a motion that is to end in a grasping or a placing action, depending upon the degree and type of muscular and visual control needed to complete the motion. This is shown by the series of curves set forth in Figure 3 where the solid lines represent nonvisually directed motions and the broken lines represent motions that are visually directed. Each of the six solid lines (and the six broken lines) represents the effect of a specified but different degree of muscular control in the grasping or placing action.

Although no more than twelve motion standard times are given for any point on the distance scale, these may actually serve as bench marks from which an almost limitless number of time standards may be found for any motion distance. This may be seen more readily from Figure 1 which sets forth the curve found by plotting the standard times for six degrees of muscular control for an 18 inch motion that requires special visual attention.

This curve indicates that motion standard times for other than the six degrees of muscular control used to locate the curve may be obtained by interpolation. Thus, if the degree of muscular control required in the ending action is considered to be between ¼-inch and ½-inch, the proper time standard will be found at a point on the time curve that is vertical from the point midway between the ¼-inch and the ½-inch marks on the bottom scale of the graph. Similarly standard times may be found for other degrees of muscular control and

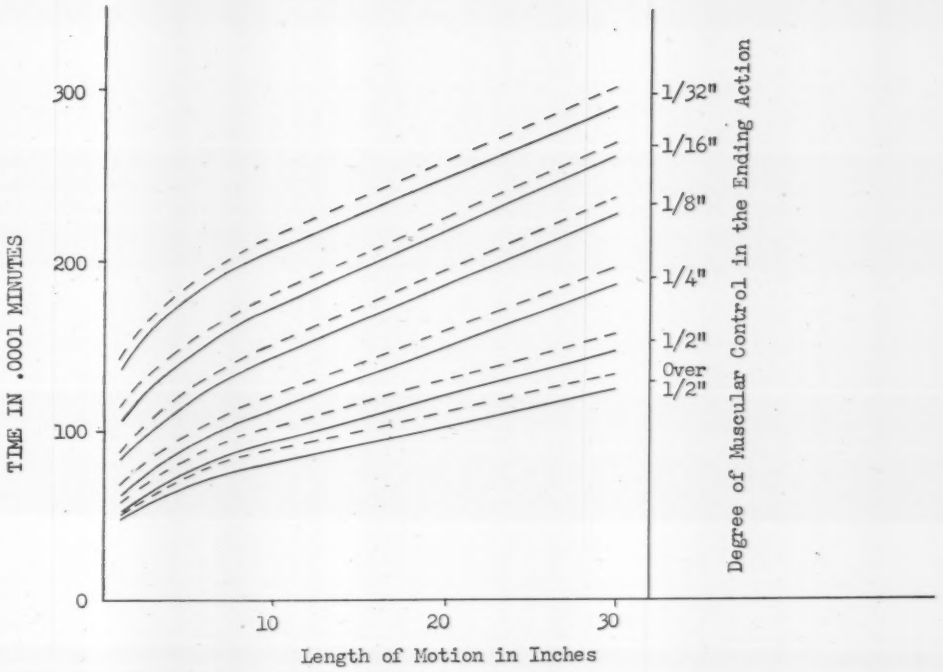

FIGURE 3.

Curves representing twelve variations in the time for a motion that ends in a grasping or placing action. Broken lines represent motions that require special visual attention.

for motions other than 18 inches in length as well as for motions not requiring special visual attention in the ending action.

Similar versatility is found in the section of the time data that is used to set time standards for handling heavy objects. In BMT, for example, the data tables provide for establishing time standards for handling objects up to 50 pounds in weight, either by placing or sliding them in position, (or by a combination of these actions), or by tossing or pushing them aside.

When the hands perform simultaneous but separate work, still other time standards may be developed from the time data and the variety of time standards that may be developed for a single fundamental class of motion is further increased.

The data tables for most predetermined time systems are arranged so that the standard times for the fundamental or basic arm motions may be read directly. Standard times for variations of the basic motions are built up through the addition of allowances for appropriate amounts of muscular and visual control. In BMT, for example, separate time data are provided to cover the effect of visual control, the effect of various degrees of muscular control, the effect of handling heavy objects and the effect of performing simultaneous arm motions.

The general procedure is shown in the four examples in Figure 4, where each of the motions covers a distance of

FIGURE 4

	BMT TIME UNITS		
	Basic Time	Allowance for Extra Muscular or Visual Control	Total Time
1. Reach from one position on top of a desk to another position without looking at second position.	111	—	111
2. Carry eraser (just grasped) to new position on top of desk when it is necessary to look at new position.	111	9	120
3. Same as above but place eraser in position preparatory to erasing a pencil mark.	111	62	173
4. Carry ash tray (just grasped) weighing 4 pounds and place at any point on a desk blotter.	111	21	132

24 inches and ends in a placing action.

Each motion is assigned a different standard time because of different degrees of muscular control and of different visual requirements.

Association of Motions in Work

It is natural to expect that fashioning the proper standard for each of the foregoing motions would be straightforward when rules covering the interpretation of the time data were provided, liberally supplemented with examples. In instances where motions occur entirely in sequence, this may be so. However, few work situations are performed entirely without instances of motion overlap. Whenever this happens, standards for the work developed from direct application of the time data are open to question.

One of the most common types of overlapping motion situations involves arm motions and trunk or leg motions. Typical is the action that involves the arm motion that occurs after moving from one position to another either by side steps, by turning around, by walking or by any combination of these modes of travel. The arm motion may not start until the feet (and body) are fully located in the new position. At the other end of the scale, the arm motion may be completed by the time the feet (and body) are in the new position. Between these two extremes, there may be a degree of overlap, with the arm motion started before the last pace is completed but not finished until later.

The relationship between the arm motion and the last pace is similar to that shown in Figure 5. Also shown is the BMT time that would be appropriate for the last pace in combination with an arm motion 18 inches in length that ends in a placing action.

In (a) the arm motion is carried out entirely after the last pace is completed. The appropriate standard time for the action is the sum of the individual motion times. In (b) the arm motion starts earlier than in (a) and is completed by the time the last pace is completed. Under these circumstances there will be no need to provide separate time for the arm motion. The appropriate standard time for the action is the time for the last pace. In (c) the arm motion occurs partly before and partly after the last pace is completed. The appropriate time for this action is the sum of the time for the last pace and half of the arm motion.

Each of the arrangements shown will be appropriate under certain circumstances. Selecting the wrong arrangement could result in a substantial error in the combined time for the last pace and the arm motion.

A Single Time for Group of Motions

The reaction of the reader may well be to wonder why instruction cannot be given that will direct the user to the selection of the proper relationship between these two motions, or failing that, why a single time value cannot be provided for the average situation.

The second query can be answered more readily. A single time value could be determined. It would probably be based on an average situation—one corresponding to (c) in Figure 5. It would no doubt be correct, or nearly so, for many overlapping situations between an arm motion and a pace. However it could be substantially in error in situations calling for either complete overlap or complete separation of the two motions.

One of the most serious objections to the publication and use of an average time value in this setting is that the user would have no way of knowing when the average value used did in fact introduce an error in his time standard. Therefore, the use of an average value, while acceptable for the average situation, could well be unacceptable in particular instances.

TO CARRY this thought a step further, it may be seen that the use of a single (average) time value for situations of this nature may lead to a valid criticism of a predetermined time system. If it turns out that either of the relationships shown in Figure 5 (a) and (b) is used in a particular instance while the standard time assigned (by edict of the originators of the system) is based on the relationship shown in Figure 5 (c), the time standard for the job of which this action is a part may well be in substantial error, particularly if it is a job with a very short cycle. With some justification this evidence could lead to the conclusion that the time data are in error, when the error, somewhat paradoxically, may well be caused from attempts on the part of the originators of the system to reduce error. A single standard time value may be considered to avoid errors in judgment as to which of several alternatives is the most appropriate one. However, it usually succeeds in obscuring the fact that it is an average value, based on a large number of possible variations, and as such may be wrong in a particular instance.

There are a surprising number of places in which the arrangement of motions may well suggest the use of a single time value to cover a variety of possible motion combinations. Among situations with this characteristic are the motions used to secure a single part from a supply of parts, or the motions used to turn the part around, or over or a combination of these actions after it has been secured.

The variable part of the work in these two instances is the number of finger motions required to expel surplus parts in order to secure one part, or to turn or otherwise orient the single part after it has been secured. The average number of finger motions required to carry out either of these acts may in one instance be one and in another instance be three of four or even more. It is virtually impossible, however, to predict in ad-

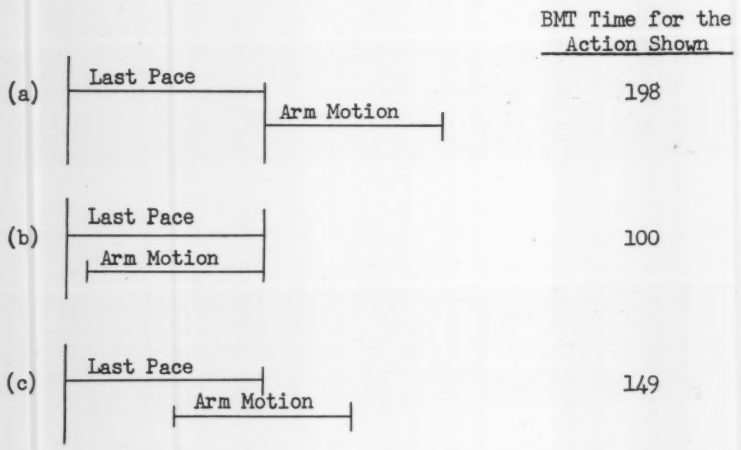

FIGURE 4.

Diagrams showing various relationships between the arm motion and the last pace as well as the time to be allowed for the action.

vance the correct number of motions for any particular situation. Such factors as size and shape of part, it is true, have a bearing on the extent to which the expelling or orienting action is required. Taken alone these factors could well provide all the information one would need to make a reliable prediction. Other factors such as the material of which the parts are made, the physical condition of the parts and the immediate disposition of the parts also have a bearing on the number of finger motions that are required.

It is not unusual to find that the expelling or orienting actions for parts that are practically identical in size and shape require on an average two or three more finger motions in one setting than in another setting. The time difference caused by these extra motions may readily amount to .010 minute. A single time standard to cover both of these situations, even though it is based upon observations from a large number of different jobs, is likely to introduce a substantial time error in the resulting element standard time.

Instructions for the User

For these reasons the use of a single average time value to cover action involving several motions is open to question. Attention must be directed therefore toward providing the user with a form of instruction that will lead him toward selection of the proper number and arrangement of motions for each new situation.

The need for providing instruction in this area is one of the prime reasons for conducting formal training courses. Rules relating to the identification of the basic classes of motion may be learned in a matter of hours. Then, almost immediately one can start to analyze work and develop standards for straightforward situations. However, much more time and practical experience is required before one can expect to apply the technique satisfactorily to work that incorporates overlapping motion situations of the type illustrated in Figure 4.

This skill can no doubt be acquired by anyone who will apply himself diligently to the task over a period of time. The originators of each of the predetermined time systems had to go through a similar period of trial before they could develop an application technique. However, they started with one important advantage over the average learner. They were thoroughly familiar with the principles of motion identification on which their time data had been developed over a period of years. They could interpret each new motion situation in the light of this knowledge as well as the knowledge gained from previous experience in developing the application technique.

All evidence points to the need for having a thorough understanding of the principles of motion identification of the system under study before attempting to use it in practice. This understanding may be obtained from a study of published literature, although it is doubtful if there will ever be a satisfactory substitute for the personal touch that comes from supervised instruction. This seems to be particularly true of learning how to apply the technique, which, as mentioned above, is the phase of learning that requires the most time. The literature may describe a certain number of unusual motion situations that are likely to be encountered, but it seems that for every one described, the learner will soon encounter a new or at least a somewhat different one. Eventually the literature may be expected to catch up with experience in the field and to include examples of most typical situations. In the meanwhile, a potential user should seriously consider arranging to receive formal training so as to make use of the collected experience of those who have been using the technique for several years.

A Strong Case for Predetermined Time Systems

Before closing this paper, it is important to recall that we have been considering characteristics of manual motions that are always present in some degree. Motions of the various body members do not always follow a set pattern. Sometimes they follow each other in orderly sequence. At other times they overlap and partly merge while at still other times they completely merge. When the hands and arms perform separate but concurrent and different motions still another condition may exist. One hand and arm may need to slow down, or move more quickly as it keeps time with the other arm.

NONE of these actions, as typical instances of the way motions occur at times, can be dealt with by assigning to them average times, for the reasons discussed. For the same reasons an actual timing of the work may lead to improper results. For example, stop watch time-study will yield a standard time for the method under observation but it will not resolve the question of whether the proper method is being used. An operator while being observed may fit certain motions together in the manner shown in Figure 5 (b) as a result of working at a very fast pace when the arrangement shown in Figure 5 (c) is more appropriate for the average person. The resulting time standard will thus be wrong for the average person. It will be too tight. It could work just as well the other way with the method used producing a standard time that is loose for the average person.

The stop watch time study observer who does not have a thorough groundwork in a predetermined time system such as BMT will be unaware of these method variations, or at least he will be unaware of their full significance.

For analysis and evaluation of work methods in detail, there is at present no substitute for the predetermined time systems. When used with skill and imagination, these systems are capable of yielding detailed information about manual work that cannot be obtained readily, if at all, by any other means. As the reasons why acceptable (and at times unacceptable) results may be expected from these predetermined time systems become more fully understood, it seems certain that the technique will assume ever increasing importance in all areas of management where knowledge of task times is necessary. ■

The engineer, if he wills it, can be the master builder in the civilization that will eventually emerge from the flux and chaos of the present day. But this can happen only as the engineer takes on a social-mindedness which makes him see his specialized technical task as only a part of the total picture—a part having thrilling quality and proportion. Engineering, to seize its marvelous opportunity, must get out of the glorified gadget, materialistic, and separatist stage and become a towering part of humanity's incessant struggle for plenty, for peace, and for spiritual values.

THE ENGINEER AS CITIZEN
by Morris L. Cooke

Just WHAT Is A Public Relations Man, Anyway?

by Donald H. Jensen
Director of Public Relations
Square D Company
Detroit, Michigan

THE public relations man . . . Just what DOES he do, anyway?

In the brisk, efficient lexicon of modern business we know that the security analyst analyzes securities, usually as a staff member of a bank or other big financial institution.

And we know that the market researcher researches markets, often as a management consultant or on the payroll of an advertising agency or corporation.

But the public relations man — does he relate publics? At first glance, a confusing thought to say the least.

Harper's magazine has called public relations the nation's fastest growing profession, with some 100,000 men and women now active. And Denny Griswold, publisher of the authoritative weekly newsletter, *Public Relations News*, points out in her annual survey how many more public relations men have in the last year moved up to key vice presidencies and even higher posts in major U. S. corporations.

Mrs. Griswold aptly defines public relations as follows: "Public relations is the management function which evaluates public attitudes, identifies the policies and procedures of an individual or an organization with the public interest, and executes a program of action to earn public understanding and acceptance."

There are almost as many other definitions of the business as there are spaceship rumors. And many of the definitions are equally out of this world.

On the other hand, the letterhead of Communications Counselors, Inc., who are, of course, counselors on communications, show their understanding of public relations to be "truth, well told."

Three little words. But how meaningful and what a wonderfully simple definition!

To tell the truth—to be motivated by honest instincts in communicating with various publics (for example, with employes, stockholders, customers and plant city neighbors, in the case of a manufacturing company).

To tell the truth—short and sweet; no stunts, no gimmicks, none of the press agentry or ballyhoo so often confused with the public relations business.

And *to tell it well*, bringing into play all of the myriad skills and techniques that are giving legitimate public relations people more and more professional status.

But why is the public relations of public relations—the man, or the business itself—in question? Of course, it doesn't help when a twice-convicted West Coast gangster is quoted by a wire service as calling himself "a public relations counsel" when picked up in an FBI dragnet not so long ago.

However, shouldn't the disadvantage that anyone can so identify himself be offset by the fact that public relations people are expert in communicating ideas and facts to the public—*in telling the truth and telling it well?*

Or isn't the public relations man the expert communicator he is supposed to be?

This is certainly an unlikely premise, based on the thousands of organizations across the country that pay public relations people good salaries and back their efforts with sizable budgets, even in periods of recession.

And there is no need of a reminder that the American businessman—whether he is running a company, an institution, a municipality or a Community Chest drive—is from Missouri, in evaluating who is pulling his weight and who isn't in a given organization.

However, to accept these conclusions: 1) that the public relations man *does* know how to communicate in terms of dollars-and-cents results, and 2) his boss knows his worth, is to be back where we started.

Ranging off in another direction, is the relative "newness" of the public relations business a big reason why it isn't better understood? Is the early association with circus press agentry still hanging on? Are the minority of incompetents in the business confusing the issue?

Or could it be that like the barber who always needs a haircut, or the bootblack with the most neglected shoes in town, the public relations man locks up his communicative skills simultaneously with his office at the end of the working day.

Maybe he just isn't interested in how society regards his work, just as long as his employer's recognition is expressed not too infrequently in terms of salary increases.

He *is* interested, though, in bettering the tools and techniques of his craft, judging by the thought and time he puts into the workshops and conventions of his professional societies. And here may lie the answer as to why it is necessary to ask, "What is a public relations man?" as well as the answer to the question itself.

RECENTLY, at the annual convention of perhaps the most influential society in the field, a widely distributed

regional magazine tied into the event by characterizing the business as one of publicity-grabbing stunts and angles.

Busily communicating with each other —with rare time off even to enjoy the city's famed beer, bratwurst and gemuetlichkeit—were hundreds of the top public relations people in America, with representatives of several foreign countries thrown in for good measure.

No one, according to a conversation with the magazine editor sometime later, ever challenged the article; he assumed that he had performed an accurate and worthwhile service to the public relations business as well as to his readers.

Stunts and angles, indeed!

The community might well have learned that the U. S. Information Agency is essentially a function of public relations, with the terribly urgent job of earning the understanding and goodwill of tens of millions of people throughout the world.

Or it might have been pointed out that the New York Stock Exchange is largely dependent on public relations methods to help attract the millions of dollars of new, job-making investment capital that American industry needs to keep growing in the future.

Or it might have been pointed out that the resourcefulness of Ike's press secretary, in quickly putting to use all channels of communication following his first heart attack, was in the best public relations traditions of keeping people promptly and accurately informed.

In another vein, there might have been mention of the dedicated work of the public information director in a small metropolitan hospital, whose quiet but effective day-by-day efforts produce tangible results in greatly increased interest in volunteer service, in nursing as a career, in philanthropic giving, and in community support generally.

Or perhaps there should have been reference to the communications specialist in a midwestern factory successfully counseling his management to support frank, *advance* information on plans to relocate a local plant in another city, thus allowing employes and the community to meet gradually the many economic and human problems involved.

But at whatever level, there should have been emphasis on the character and stability of public relations people generally, not as back-slapping, cocktail-happy stuntmen, but as serious, hard-working careerists.

And on the wide range of communications techniques that are expertly utilized: opinion research, institutional advertising, television, motion pictures, annual reports, technical papers, magazines, news releases, exhibits, conferences, speeches, plant open houses, and many, many more.

And on the huge scope of interests served: banks, railroads, schools, industries, labor unions, churches, governments and almost every other conceivable type of organization.

And finally—but most importantly—on the often overlooked public relations function of counseling management, *of relating publics* and their specific interests to the problems, policies and plans of a given organization.

All of which isn't meant to suggest that *one* publication in *one* convention city could have any great effect on the public relations of the individual public relations man or the business itself.

But it is meant to suggest that if ever the public is to recognize public relations as a field worthy of professional status, and to associate the public relations man with the vitally important aim of *telling the truth and telling it well*, the leadership must properly come from the national organizations in the field.

And what a wonderful opportunity a convention of communications people offers in giving the particular city in which it is held at least some small insight into the particular purpose of the public relations business in modern American life—and to set an example and an inspiration which convention participants can carry back to every section of the country. ■

Rating Errors In Time Study

RATING ERRORS may be due to a number of causes, seven of which are enumerated below:

1. Inadequate or poorly designed rating scale: For example, there may not be sufficient percentagewise spread between ratings assigned average incentive operator and "super operators".

2. Not understanding rating scale: No matter how well designed the scale is, if raters don't understand it and do not employ it properly, errors will result.

3. Not understanding operation: If the rater doesn't thoroughly understand the operation including the method, tolerances, quality requirement, operator skill requirement, et cetera, he has no real basis for rating.

4. Systematic Bias or Systematic Error: A rater may be consistently "tight" or "loose". This condition may be unintentional or deliberate on the part of the rater. If the rater really wants to correct for systematic bias and knows the extent of, and in what direction his bias lies, he can overcome it.

It should be kept in mind that a rater can hold biases for or against individual operators or departments, that will not necessarily show up when he is asked to rate films.

5. "Conservatism" or Error of Central Tendency: This is the very common and pronounced tendency of most raters to overrate poor performance and underrate excellent performance. It has been described by Barnes, Carroll, and others. There are indications that a well designed program of training raters can at least partially overcome conservatism.

6. Anchoring effect: It has been found in the conduct of this Rating of Time Studies Project that the arrangement of scenes in a rating film can, under certain conditions, cause serious "shifts" in concept of proper performance. For example: If scenes are arranged from fast to slow a different value will be obtained than if arranged from slow to fast. Under extreme conditions a difference of as much as twenty per cent may result. The anchoring effect is well known in experimental psychology. In explanation, if a rater first sees a championship performance, the average performance that follows appears clumsy; Whereas, if he first sees a poor performance, the mediocre performance that follows looks quite good.

Previewing all scenes just before rating minimizes the anchoring effect.

7. Random error: This last is the irreducible error of a single performance rating. Some men, because of some inherent ability, can hold this residual (average) error to about three per cent under good conditions. There seems little hope that any further reduction can or ever will be made since psychological tests have shown that average error will not go much below three per cent even on much simpler absolute judgments such as judging linear distance (judgments made without a physical standard with which to compare of course).

This does not mean that standards cannot be more accurate, it is simply a question of obtaining more than one judgment. The accuracy of the average increases roughly as the square root of the number of judgments obtained—as long as only random error is involved. For example: The average of twenty-five judgments tends to be five times as accurate as a single judgment ($\sqrt{25} = 5$). Thus, if the average error of one judgment is five per cent, the average error of twenty-five such pooled judgments tends to be only one per cent. ■

MANUAL OF THE S.A.M
PERFORMANCE RATING FILMS

Enlargement Of Managerial Capacity– A New Approach To Manager Development

by William Exton, Jr.
Principal
William Exton and Associates
New York City

MEMBERS of management, military commanders and all other living organisms offer evidence of their "competence," "intelligence," "capability," etc., when they act in such a way as to bring about more desired results, and fewer undesired results, than would occur with "random" behavior. Measurement of the results of behavior in such cases indicates a relatively consistent "goal-orientation" ("keeping your eye on the ball"); and some capacity to affect favorably the probabilities of attainment ("improving the odds"). Such adaptive, constructive, purposeful behavior in support of organizational objectives may be regarded as basic "output" of successful management.

Some consistently successful executives are credited with "infallible intuition" or "perfect judgment;" while others are considered to be just plain "lucky." Managerial success has also been credited to positive characteristics ("strength of character," "drive," "never hesitates," "forcefulness," "never lets up," "persuasiveness," "powerful personality," etc.); and to negative characteristics ("never makes a mistake," "never commits himself," "never gets out on a limb," "never takes a chance," "sits back and waits," "plays it close to the vest," "knows how to say no!" etc.); and to many other loosely labelled, highly personal traits.

Perhaps means will someday be found to evaluate such apparently potent traits on an accurate, standardized, predictive basis; and then to develop them as appropriate—purposefully and adaptively and appropriately—in mature individuals. Such a process would make attainable potentials now inconceivable. And it will be only then—if and when we achieve such breakthroughs — that the development of managerial abilities will have reached its maturity.

Toward such a challenging ultimate, very little progress is now being made. But—even more depressing—present emphasis in "management development" seems to ignore the fundamentals involved in such a basic approach.

On the whole, there seems to be a sound basis for questioning whether business today—however it informs, equips, supports and professionalizes its managers—is actually contributing as much to the development of their fundamental managerial capacity as it did in past generations.

There has, of course, been a deep, underlying trend throughout management toward dependence on group judgments rather than individual judgments. This has been only partly balanced by operational decentralization in organizations too huge for wholly centralized decision-making, and circumscribed delegation under conditions of prescribed responsibility.

It is increasingly recognized that juniors must be "allowed to make mistakes" as a part of the development process—a belated acknowledgment of the applicability to business of such basic learning principles as "practice," and "trial and error." But the scope for such learning is being increasingly narrowed; the "angle of fire" open to the young executive is even more acute. As his field of activity narrows, his experience teaches him proportionately less of general and more of specific application. While even limited experience can provide some special basis for illustrating a principle, the broader applications of principles thus learned are decreasingly apparent.

As one looks about the management horizon today, there seems to be little change in the traditional view that the valued traits of "judgment" and "good common sense" are rather to be *discovered* in individuals, than *developed* in them. Emphasis has been placed on selection, placement, and motivation; on encouraging and fostering the utilization of such qualities as the mature individual already possesses ("THINK!"; "Work Smarter!"; "Plan Ahead!"; etc.). There has been little attempt actually to inculcate these qualities, or to enhance them beyond the "natural endowment."

And yet there are impressive reasons for believing that management men *can* be helped to increase substantially their personal ability to maximize desired and minimize undesired results. They *can* be helped to improve the essential basis for this ability—the personal capacity for more consistently adequate performance in the necessary preliminaries to intelligent action.

Actually, then, "good judgment" *can* be developed — in the sense that the necessary basis for the decisions and problem-solutions preceding "appropriate action" can be developed as well as the personal capacity to act appropriately on such decisions and solutions.

We have spoken of "competence," "intelligence," "capability," etc., as characteristics of the "*Output*" of successful management. It is fundamental

In Memoriam

It is with profound regret that we announce the death, on March 23rd 1959, of

John W. Nickerson

Among his many honors in the field of management, Mr. Nickerson received the S.A.M Industrial Incentives Award. His professional efforts were many and fruitful. He organized the Management Consulting Division, War Production Board, that set rules for wage incentive installations under wage stabilization. He organized also the Advisory Committee on European Productivity under MSA. He spearheaded the effort to eliminate the clause from congressional appropriations acts that prohibited the use of timestudy and incentives in government work.

with organisms as with organizations, that *Output* must be preceded by *Intake*, and by *Process*. In this sense, an *OUTPUT* of intelligent behavior depends on:

An *INTAKE;* whereby the manager must become aware—with sufficient accuracy and completeness—of significant events, facts, conditions, developments, etc., necessary for effective *PROCESS*.

A *PROCESS;* whereby the manager must evaluate the *Intake* adequately, relate it appropriately to past experience, present purpose and future needs; and then project adaptive, predictive courses, having sufficient probability of achieving a positive balance of desired results through appropriate *Output*.

The *OUTPUT*, then, would consist of effective formulation, communication, delegation, supervision and administration—(or in some cases the execution itself)—of plans, policies, operations, and activities to implement the solutions, decisions, insights, ideas, etc., evolved through Process.

THESE major phases of intelligent behavior are here labelled "Intake," "Process," "Output;" but these terms should be regarded as applying to arbitrarily designated aspects of the functionally unified complex of behavior. Not only are these aspects inseparably integrated, but infinitely various overlappings and inter-actions are continuously affecting the intakes, processings, and outputs; and also the relations and interconnections among them.

It is the purpose of this paper to consider both the implications and the feasibility of developing, training and channeling the *generalized, adaptive capacities* of management men. This principle is here regarded as more fundamental than—but in no way conflicting with—training and development more particularly related to the specific industry, corporation, or specialized function. In fact, it is here postulated that this more general approach is an invaluable if not essential catalyst for the fuller and more effective exploitation of *all* forms of experience. (There is an obvious parallel here, to the traditional distinction between the "liberal education" and technical or vocational training.)

"*Intake*" here refers to any external source of conscious effect upon the "organism." The direct evidence of the senses are a major source of *intake* to the "front-line supervisor;" but these may not be so important to the Chairman of the Board. Non-direct sources, such as oral and written reports, are the most common source of *intake* for most of management above the "front line."

It is axiomatic that people differ in their "intake characteristics." Some people "notice things" better than others; they are more "observant;" they "don't miss a thing." Some people "read better" —faster, more analytically; or they remember more. Some men "understand people" better than others, or they "listen better;" they "get more" from conversations, interviews, conferences, meetings —contacts of various kinds.

Sometimes *intake* is quite inaccurate; often it lacks vital elements; sometimes it is crammed with irrelevant material. "Sufficient accuracy" for one purpose, subject area or stage of consideration may be quite insufficient for other purposes, subject areas or stages. Information or data may be "significant" to Sales, "insignificant" to Personnel; significant now, insignificant later; significant if *this* decision is made, insignificant otherwise, etc. And of course enough *intake* for one purpose may be far from enough for some other purpose; while excessive intake can be confusing, time-consuming, wasteful and baffling.

The manager must seek sufficient information in many ways, some of which he must improvise. But—even more important—he must be able to "read" the indications that come his way. He cannot afford to miss anything that should be significant to him; he cannot afford to overlook, misinterpret, underestimate or exaggerate.

Conversations, observations of the behavior of others, indications of changing attitudes, verbal and written reports, variations, trends, developments of all kinds—any of these may reveal implicit as well as explicit information that he needs in order to manage well. When to seek more information; when to check accuracy and reliability; when to compare, correlate, review, survey—these are *decisions* as to *required* information that must be made on the basis of *available* information.

All these and many other aspects of *intake* are basic to the function of manager. And yet, what *fundamental* training do managers receive to fit them for this fundamental role?

It has often been shown that subjective factors can have such potent effects on observation that even completely sincere and "honest" eye-witness testimony can be utterly illusory. The mechanisms of "perception" and their effects upon "evaluation" are being ever more deeply explored by the scientists. Ames[1] and those following him have shown that there is, in effect, no such thing as "objective" observation. The factors that distort perception, and also the factors that affect the validity and interpretation of reports, are widely recognized and somewhat understood; but so far their importance has not been reflected, in any significant way, in the development of managerial capacities—where the applicability is tremendous!

IN ADDITION, of course, the use of language itself is an all but inevitable source of distortion, misconception and obfuscation. The manager is the recipient of unending streams of language "intake", and is subject to the same liability to misapprehension, false impressions, or deduction, wrong interpretations, etc., as anyone else. Various of the principles expounded by Korzybski[2] and others—the infinitude of characteristics; consciousness of abstraction and of assumption; the "map-territory relation" and others—have wide application of "intake;" and therefore great potential value in the exercise of managerial functions. But the adoption of such principles in training and development programs has been slow and minor.

Not to labor this point, and to sum up so far: it is here contended that the primary "material" for the initiation of intelligent behavior consists of adequate,

[1] *Ames, A. A.; Various papers of Institute for Associated Research.*

[2] *Korzybski, A.; Science and Sanity.*

selective *intake;* and that the capacity for such intake can be enlarged and improved. This can be accomplished through the application of available (but not generally utilized) training and developmental procedures, in order to inculcate certain principles and doctrines of demonstrated validity and effectiveness.

THIS is not now being done to any considerable extent; but it can be, and it should be done; increasingly it will be done. If other evidence were lacking, we could cite our own experience. We have actually experimented with demonstrations, techniques and methods in this area, in connection with various programs including conferences and seminars[3]. We have seen the extraordinary effectiveness of the resulting experiences in the reception accorded them. And we have had testimony as to their subsequent value "on the job."

Intake may be regarded as the raw material of *PROCESS;* but it also affects and influences *PROCESS.*

PROCESS, the internalized behavior that "digests" *intake* and converts it into *OUTPUT,* is beyond the furthest bounds of our scientific knowledge. Many brilliant explorations are being conducted in a diversity of ways; primarily physiological, psychological, and social. These basic approaches are sometimes combined, and are often expanded into mathematical-statistical studies. In addition, certain theoretical approaches are attempted through mathematicological techniques. Mathematicians and statisticians often evaluate *process* in terms of computer functions. (Decisioning is dichotomous; sequential; etc.)

All of these approaches and many others are seeking clues to the "how" and "why" of behavior; and their successes lead in the direction of measurement and predictability of certain aspects of behavior.

Already a number of managements rely for various purposes on psychological tests and measurements that are derived from the results of various scientific approaches toward *process.* Some companies use such tests to select and evaluate individuals; and also to measure the results of training; or to derive indications of trends, or changes of attitude.

But these are primarily "before and after" approaches to the study and evaluation of *process. Process* itself is intangible, invisible; to all intents and purposes it is "abstract." Therefore it is measured primarily in its effects; and this usually requires "before and after" measurements of some kind.

So many such measurements have been made, on so many different criteria, and under such a variety of conditions, that they have given rise to a number of useful hypotheses which appear to "fit" the observed data.

Some of these hypotheses are restatements or refinements of age-old experience and practice. (Examples: repetition and emphasis facilitate learning; reward and punishment can change behavior; etc.) Others confirm and explain familiar observation, and provide rational bases for systematic exploitation of the principles revealed. (Example: Pavlov's experiments with *conditioned* reactions to stimuli *associated* with rewards but *not* rewarding in themselves; i.e., dogs salivating when they heard the *sounds* that usually announced their food.)

We know that some of the findings resulting from these scientific explorations are applied in the *selection* of managers. But to what extent are these tests directed at evaluation of the *capacity* for "*process*"*?* "Intelligence" has been defined as "something that is measured by an intelligence test," with the implication that each "intelligence test" measures something different. "Process," presumably, is related to but is only a *part* of "intelligence."

We know also that some of the findings of sciences dealing with *Process* are applied to keep the manager—as a human organism—in better adjustment to his environment. "Counselling," professional "guidance," treatment of various kinds and degrees; and other resources of the psychological (and medical) arsenal can be applied preventively or therapeutically; with consequent gain in the manager's disposable energy and efficiency; and also in his ability and disposition to concentrate on the job.

But such measures can affect *process* only indirectly; and they are usually corrective rather than developmental. However potent, necessary, and valuable in case of need, these notable resources have not been generally translated into planned improvement of managerial effectiveness.

To what extent, then, is the fruit of all such research utilized for the purposeful, systematic enlargement of managerial capacity? The simplest, broadest, most practically significant answer is: *very little,* in proportion to the contribution available!

What developments, then, *have* made basic contributions to the probable improvement of managerial *process,* in the last several decades? We might list these somewhat interrelated evolutions:

1. General recognition of the existence of socio-psychological factors in most situations, and affecting most business activities. This growing basic recognition has pervaded our "thinking" and "attitudes toward others" so fundamentally that its effect, however great, is impossible to "isolate" for evaluation. (It has been most systematically applied in marketing, personnel administration and industrial relations. "Human Relations" and "Industrial Psychology" refer to aspects of this development.)

2. Utilization of effective *Non-Verbal* techniques—primarily of creatively interpretive visual and audiovisual presentations, that stimulate or extend insights and associative reactions, and add new dimensions to communication.

3. Acceptance of the advantages of surveys over personal judgment in the evaluation and prediction of group or mass reactions, in planning products for mass consumption, in planning the content (editorial and advertising) of mass media, etc.

4. Increasing adoption of group or "team" interaction processes—following permissive, integrative behavior patterns, and with some consciousness of "role"—for decision-making, for securing acceptance of decisions, for furthering attitudes of participation, etc.

5. Evolving, if still largely superficial, sophistication about linguistics, semantics, symbolics, etc.

6. Recognition of the significance and importance of communication generally, in all inter-personal relationships, and as a major factor in the functioning of organizations.

THERE are other developments, such as application of the case study method to the training of mature executives. But the six listed above should suffice to exemplify the situation. These represent invaluable areas of progress; but even with these we have barely scratched the surface of their potential contributions to the effectiveness of managerial process.

It seems obvious that there is a tremendous advance to be made in managerial technology, if only through the systematic application of the demonstrated advantages of such contributions to improvement of *process* as these. To-

[3] *Supervisory Conference Program; First National City Bank of New York;* 1954-7. *Institute of Human Communication; various seminars,* 1955-8.

day, no training or developmental program aimed at managers may be regarded as likely to realize a justifiable potential, if it does not accept the improvement of *process* as part of its objective.

The clear evidence of the manager's capacity lies in his "*OUTPUT*". We have no way of knowing about the hidden trials and triumphs of his "*process*". We can *only* know the visible, audible, tangible results! What he does, what he says, what he writes; what he leaves undone, unsaid, unwritten; how he behaves and acts; how and wherein he changes; all of these involve overt, objectively determinable phenomena. These are his "direct *output*" or "gross *output*."

Top management sometimes chooses to ignore all such elements of direct or gross *output*. They "judge by results"—by certain effects of his output. In fact, this means they judge by a limited but definitely stated fraction of the results. And so the balance sheet, or the monthly summary, or other directly measurable factor becomes their prime index of achievement, and provides their residual "picture" of the manager.

THIS index is, of course, indirect; and so it may tell little about his "direct *output*." Thus it cannot provide an adequate basis for evaluation of the manager's contribution toward the improvement or deterioration of factors—however important—that are not reflected in the severely limited "picture" of "results" by which the manager is "judged." Over the short range at least, top management can easily be in error about a manager's possible long-term value, when only certain specific considerations are taken into account.

Individuals closer to the manager are not usually so selective of criteria. They will be acutely conscious of much of his "direct *output;*" and will act upon or react and adjust to components of this "direct output" in their own ways. This can have all sorts of effects upon organizational efficiency which may not be readily revealed by the data upon which top management relies.

It seems clear that a major part of the manager's "direct *output*" involves *communication.* Except for what he does himself, he can get nothing done except through others. Every act of direction, coordination, cooperation, guidance, advice, approval or disapproval, etc. involves the initiation and delivery of a communication of some kind. Relations with superiors, also, involve constant communication. This includes, of course, reports of every variety and type; both formal and informal, written and oral, regular or special; and requests for information, authorization, direction and policy guidance; or for services, material, personnel, funds, supplies, etc. Relations with superiors and subordinates, with colleagues or other managers on the same level, with customers and competitors, community and government —with any individuals or groups inside or outside the organization—in fact, all aspects of relationship involve communication.

In its broadest—(and probably its most useful)—sense, the term "communication" covers any kind of "behavior" short of physical force by which one "organism" affects another. Such breadth of definition is confusing to many because it would include such great extremes.

For instance, verbal communication is sometimes only incidental to an act of greater significance. When an executive promotion is announced, the subject and others are exposed to revealing implications of upper-management "thinking" and activity; this will be variously meaningful to each individual, according to his own interpretation, evaluation, aspiration, etc. Announcement of price change can cue significances—to those in possession of relevant information—that may be of profound importance even to non-purchasers, such as competitors or creditors. But people (including managers) vary greatly in their ability to *foresee* and anticipate such potent incidental communicative effects as these. We are all constantly being surprised at the way others react—or fail to react—to our communication.

Under some conditions the most trivial "signal" may carry a tremendous "freight." The feel of a handclasp; the quality of a smile; the choice of a word; the tone of a voice—any of a myriad conscious or unconscious minor components of behavior—can be pregnant with meaning that is out of all proportion to the "vehicle" of voluntary or involuntary expression. Some persons are extremely sensitive to such indications, and derive valuable information from close observation.

Others, of course, fail to observe the same phenomena, or attach little significance to them, or even interpret them wrongly. Much will depend upon the individual's ability to relate such apparently minor or incidental phenomena to the major components of the situation. And experience alone will not teach this! Far too many managers with decades of exposure to the behavior of others are virtually "blind" to many of its manifestations.

It is obvious that communication *output* can have effect only as it becomes part of another's *intake*. Demosthenes, addressing the sea, was not communicating; but the same oration delivered in the Agora had a powerful effect.

In a face-to-face situation that develops with satisfaction to both participants, the give-and-take results in accelerating adjustment of *outputs*, as feedbacks contributory to the other's *process*. Increased "understanding" is felt as the *intake* gathers relatively more and more of the available *output;* and as this *intake* feeds—and does not interrupt, obstruct, or starve—the developing *process*.

However, a cycle that is fundamentally comparable to this exists *potentially* in any relationship—face-to-face or remote; intimate or distant, continuous, occasional, intermittent, or even "one-shot." And the capacity to contribute to a full share toward the realization of the potentials in these situations is surely an essential characteristic of the "well-rounded" manager.

MANY of the techniques of *output* are taught. But unfortunately, skill in techniques of communication is not necessarily related to the value of the *output* —because of other factors. Thus the skilled speaker may utter only resounding platitudes; the skilled conference leader may discourage enthusiasm, energy and initiative as "aggression;" the skilled writer may oversimplify, overpersuade, and exploit emphasis for effect rather than guidance; the skilled negotiator may "win the battle and lose the war;" the skilled salesman may merely pave the way to disappointment and disillusionment. How many times have executives exclaimed over the worthlessness of a "brilliant" but inapplicable report? And how many sound and constructive ideas and recommendations have been lost, hidden by the confused and murky language intended to convey them?

Perhaps the remedy lies in working toward a better balance in the behavior cycle. Thus greater emphasis on *intake* and *process* should help to improve the contributions of those with strong *output* aptitudes. And for those with high capabilities of *intake* and *process,* greater emphasis on *output* skills should be advantageous. This should help make the observations and deductions of the engi-

neer, the researcher or the crack production man—for example—more useful to others.

The correlation of specific communication skills with other forms of ability has long been recognized. But must modern management accept the implications of this situation as inevitable? As communication plays an ever more pervasive part in the functioning of all phases of our business organizatons, can we afford to accept a progressive decrease in the relative effectiveness of those who possess valuable competence in essential fields, but lack comparable capacity for effectiveness under the limitations of organizational participation?

Can we afford to accept the probability that all phases of our business organization may be decreasingly influenced by men who have outstanding substantive contributions to make toward organizational success? Must we accept as inevitable the increasing domination of business by men whose major capacity is that of skillful adaptation to organizational conditions?

THE primary requirement of a successful manager is consistently sound judgment, as demonstrated by subsequent evaluation of consequences of his actions. While managers at lower levels may seldom be called on to exercise judgment in unfamiliar matters, the manager of high-level responsibilities must be prepared to deal with emergent situations of all kinds, quite possibly new and strange to him.

The ability to apply sound judgment depends on the capacity to observe accurately, to abstract essentials, to analyze the basic relationships, and to translate them into a "structure" that is sufficiently understood for the application of principles derived from past experience. Necessary organizational action may then require a variety of communicative performances, often complicated by subordinates' unfamiliarity with the subject.

The capacity of the manager to deal with such problems cannot be adequately developed by training in any one subject, technique, or aspect of the behavior cycle. Treated as an organic whole, however, the functioning of the basic behavior cycle (intake, process, output) *can* be improved, with resultant improvement in over-all effectiveness. This is the logical, primary basis for enlargement of the general capacity for effective behavior of any individual — as man, as employee, as professional, or as manager. ■

Business Policy

A BUSINESS policy is basically a principle, or a group of related principles, with their consequent rules of action, that condition and govern the achievement of certain business objectives. A principle is a statement that is accepted as true in the present state of our knowledge, which sets up a meaningful relationship between cause and effect. The effect in business organization is the business objectives that must be accomplished. The cause is work. The functions of the business organization are the work that it does. The work that must be done is determined by the values that the organization must produce and distribute. The requirements for an effective, economical performance of this work determine what men, money, materials, machines, and methods must be used. Policy is obviously a linking factor. It provides a meaningful relationship between business objectives and ideals on the one hand, and organizational functions, physical factors, and personnel on the other. It governs, accordingly, the managerial work of planning, organizing, and controlling, as well as the operative work of doing or making.

A policy has two principal parts, as indicated by the above definition; the principle that governs, and the rule that indicates the general manner of its application. The principle is the basis of the "reason why" that gains acceptance of the policy. The rule "lays it on the line". It is the basis of opposition to the policy, when it stands by itself. We may have a policy governing tardiness among hourly rated employees, for example. It may say: "An hourly rated employee shall be docked 10 minutes pay for each 5 minutes that he is tardy." This is the rule. It may cause resentment, if nothing further is said. It may give outsiders an excuse for charging management with "exploiting the worker". The rule may be preceded, however, by some explanation such as the following: "The success of the organization, as well as security of employment, depends on a continuous flow of customer orders. It is the customer who provides work. His patronage depends on the organization's ability and willingness to give good customer service continuously. Good service includes cost and delivery as promised, as well as the quantity and quality of the goods that are specified in the order. The tardiness of hourly rated employees interferes directly with production. Any interference tends to increase production costs and break down production schedules. The following rule must be applied for these reasons." This is an explanation based on what the particular management believes to be sound operating principles. A particular employee still will not enjoy being docked. A majority of the employees may accept the rule as reasonable, however, because of the reason stated.

INDUSTRIAL ORGANIZATION AND MANAGEMENT
by Ralph Currier Davis
Published by Harper & Brothers

Developing Professional Personnel

by R. M. Sheehan

Director
Management Training Service
Beaumont, Texas

IN THE field of training, as in all fields, we are inclined to adhere to a set pattern of action which, although successful in the past, is inadequate for meeting new problems. Effective growth, development, and use of professional personnel in industry is one of these problems. And it is a critical problem; the professional ability available in industry is not being used effectively.

The careful observer cannot help but be aware of the increasing number of engineers, economists, lawyers, psychologists, pure physical scientists, and statisticians applying their professions as employees of industry. Until recently we assumed such professionals to be in private practice or on the faculty of one of our colleges or universities. And now, just as the essentiality of professional talents within industry is being recognized, there are reports of numerous professionals returning to the ivy walls or entering private practice. I recognize that training is not the sole solution to these problems. But if we can broaden the scope of training—and that we *must* do—then we will have taken a significant step in the right direction. Two specific suggestions are: (1) see that information on the special personnel problems of professional employees is incorporated in the firm's general executive or management development program, and (2) provide high-level administrative or management education to parallel the professional's growth in his chosen specialty. Here we will emphasize the latter.

Before going into details about the growth and development of professional employees, however, let us examine the nature of this work. How does the professional and his work differ from those of the non-professional?

Professional Work

Whether in management, medicine, engineering, or law, whether within an industrial concern, a private practioner's office, or a college or institute research laboratory, professional work differs from non-professional work in many respects. In industry, where some feel management is becoming a profession, confusion exists because professionals and non-professionals alike often have the same title. To make the dichotomy more specific, however, terms such as creative vs. routine, technical man vs. technician, and dedicated vs. "eight-to-fiver" have been used. To define professional work precisely, Yoder lists nine criteria:

1. Every profession involves the uniform performance of *standard practices and procedures* voluntarily understood and accepted by members of the profession as appropriate under given circumstances.
2. These practices are based on *specialized training* and on *continuous research* and study.
3. Each profession has a *specialized terminology* . . .
4. All professions assume the *sharing of information* among all members of the profession.
5. All professions provide a continuous flow of *professional literature*, the principal purpose of which is to disseminate information on current experiments, discoveries, and developments.
6. All professions require a high degree of *personal responsibility* on the part of members, which is coupled with a similar freedom and independence of action.
7. All professions require, for admission, certain *minima of skill and knowledge.*
8. All professions require, for membership, certain *standards of ethical practice.*
9. All professions require of their membership *primary allegiance to the professions*, to its code of ethics, and to the public interest.[1]

It would be well to add graduate-type training and a probationary period or internship period prior to obtaining professional status.

Items one and six from Yoder's list adequately sum up the nature of professional work — particularly the phrase "personal responsibility coupled with freedom and independence of action". The phrase emphasizes the "non-organization man" as opposed to the "eight-to-fiver". It is this desire for independent action which often brings the professional man in conflict with the organization. Both the professional manager and the senior professional specialist must acquire new understanding and skill if harmful friction is to be avoided, and if continued effective contribution by this expanding class of professional specialists is to be insured. In addition to his

work being different, the professional's psychological make-up sets him apart from non-professional employees. To appreciate these differences, let us sketch in roughly the non-organization man.

The Non-Organization Man

We all know that professional development requires a probationary, or internship period. For the budding professional specialist in an industrial organization this formative period is a most critical one, because for him the function of this period has not been so well understood as it has been for the doctor or lawyer. It is the period during which a development program within the firm can provide the technical specialist with both method and direction for maturing into a professional specialist, when otherwise he might become a "typical engineer". The potential professional man to be discussed here, with his strong points and his weaknesses, would be enduring such a period of trial.

A review of the literature about professionals in industry reveals the young engineer to be the principal subject for research and discussion. Since this class of professional specialist outnumbers all others at present this partiality is germane. Information in the literature points up the fact that today's engineering graduate is typical of this class. So comments here will be limited to studies of engineers, but can be adopted with slight modification in planning developmental programs for beginning lawyers, physical scientists, accountants, psychologists, and statisticians in industry.

More than any other characteristic, *creativeness* appears to distinguish the professional from the non-professional. Research reported by Peck indicates a rare set of conditioning experiences had to combine with equally rare inherited abilities to produce the creative man with above average intelligence, strong motivation, responsibility, and independent thought and action.[2] Because of this there is every reason to believe that for some time to come the traditional shortage of creative people will continue.

Lodge believes this personality type when reinforced by technical training results in producing a man with a "philosophy of realism".[3] The realist looks to establish principles for authority to act in a particular situation. Therefore, he may not see or be willing to admit the existence of factors within a total situation which were not covered by one of the principles from his limited technical training.

Regardless of which type of company you work for, it is your responsibility to yourself and to your family to plan for and see that you are continuously developing the skills and abilities necessary for the particular goal or goals which you have set for yourself. It is you who must establish your own goals. It is you who must determine the philosophy of business life which will enable you to achieve your goals. It is you who must establish a program of self-improvement, and implement that program for yourself.

THE INDIVIDUAL'S PROGRAM FOR SELF-DEVELOPMENT
by George W. Bricker, Jr.

In a similar vein William Given, an engineer writing about engineers, quoted one executive in his firm as saying:

> *Many engineers do not believe in the importance of things which cannot be measured—such things as attitudes, emotions, customs, traditions, prejudices. As a consequence they fail to deal with those things which cannot be solved by logic alone.*[4]

Much evidence exists in the literature, and my experience has convinced me that the leadership practices which can be used with non-professionals will not work with professionals. Their temperaments require that the professional be led, not driven. This group wants a hand in setting personal as well as organization goals and standards. They may accept a superior's definition of a problem, but they insist on being left alone to use their own knowledge and judgment in arriving at the solution to their problem. The professional wants to measure up to standards of the organization, but even more, he must know within himself that he is making a genuine contribution, that he is meeting his own standards. More even than recognition by his organization, this man seeks the respect of other recognized professionals within his specialty.

Admirable as these characteristics may be, they often result in problems for a large organization. Some one of your acquaintance has probably commented that "we can't live with them, nor can we get along without them". As an individualist, the professional employee resents having to put up with many traditional personnel techniques along with other administrative procedures which he may feel are an insult to his intelligence. His air of superiority often brings retaliation from the non-professionals with whom he associates. He particularly resents "canned" training programs which "'give him the word". Drucker has commented that, "more than any other group, professional employees demand an opportunity to ask questions and expect long, detailed and frank answers".[5]

With the growing number of professional specialists in industry, the job cut out for "training" is staggering in scope. This job will be done only as familiar training concepts and techniques give way to broader thinking in terms of *facilitating* professional development. At the same time, the staff training specialist will also have to recognize the limitations imposed on him by this current thinking. Nevertheless, the facilitating role of training within a professional development program is important.

Development Distinguished from Training

The concept, that development of his high caliber personnel is a prime function of all executives or managers, today is generally accepted. It has been stressed in modern management literature and is put forth in the numerous management development seminars conducted by the American Management Association, other institutes, and leading universities. Experience has demonstrated that line management from top to bottom only, as opposed to any training staff, can provide the climate for professional growth. It must also be recognized that most of a young professional's advanced training will come from the job situation. Since he is highly self-motivated, much of it will result from his own efforts. More of it will also come by precept as he watches the senior professional with whom he works. These are familiar examples: A young intern working alongside a fine surgeon, the junior engineer working with a senior technologist, the new department head's interaction with a professional manager, and the most notable example, a graduate student performing research under the direction of a professor who is both a great teacher and a specialist in his field.

What then is left for formal training?

Despite the effectiveness of this coaching relationship, where management understands its importance, there is much knowledge the young professional can still gain from formal courses. Today professionals never stop taking refresher courses in their specialty. Of equal importance to the specialist in industry, however, is information from the growing field of management or administrative science since his work is done in an organization. Both types of courses are offered at universities, institutes, and in-plant by large organizations.

Once the request comes from senior professional specialists or line management for such formal courses, then "training" can begin its facilitating role. My experience makes me question the advisability of "training" trying to sell "management" on such courses. This is particularly true if one's management has not recognized its responsibility for the professional development functions of determining what courses are needed, who needs them, and when they are needed.

THE nature and background of the young professional specialist is the determining factor in having each course custom-made to meet his particular needs. Content of professional courses must be carefully researched; better they be too high than too low. Methods of instruction could be patterned after methods of leading graduate schools; cases and problems are highly recommended. Even the length of class meetings and the number of meetings suitable for the group in question must be determined; professionals will do well with a highly concentrated program.

Secondary research revealed that technical men need to gain specific knowledge as well as to make certain attitude changes as they progress through their probationary period. McNair[6] and others have pointed out, and my experience in trying to teach general management to youthful day students and adult evening students has convinced me, that most of this needed non-technical information should not be presented until the recipients are approaching their thirtieth year. Even where the undergraduate technical education contained an acceptable amount of the Liberal Arts, additional work in economics, general management, communications, and human relations still is essential and most meaningful in graduate education or *continuing education*—graduate-type programs not directed toward an advanced degree.

Although I know full well that each course must be designed to meet the needs of the particular situation, the following section is devoted to describing two programs or seminars constructed for engineers and scientists in the Gulf Coast area of the Petro-Chemicals industry.

An Inter-Company Program

To test this idea a series of seminars were planned for a group of engineers from the Petro-Chemical and its service industries.

Firms sending professional personnel to one or two of the programs were Koppers Company, Inc., Gulf Oil Corp., Spencer Chemical Company, Goodrich Gulf Chemicals, Inc., Neches Butane Products Company, Magnolia Petroleum Company, Alco Products, Inc. and Bethlehem Steel Company. Two seminars were held on the campus of Lamar State College of Technology. Subject matter mentioned above was covered in each seminar, one of eleven weeks, the second of thirteen weeks. One three-hour session per week. Heavy reading assignments were made to correspond with cases and discussions. At the close of each seminar participants answered questionnaires covering every facet of the seminar. Though job performance follow-up has not been possible, questionnaires from and discussions with seminars members gave sufficient validity to this development approach for it to serve as a pattern for the in-company program which will be described in detail.

One Company's Experience

This seminar was conducted as part of the Professional Development Program of Magnolia Petroleum Company (a Socony Mobil Company), Beaumont, Texas. It began in August, 1958. Objectives were as follows:

To introduce major concepts in the social sciences—Economics, Sociology and Psychology.

To help participants recognize their own attitudes, make better observations and ask better questions of their experience.

To stimulate thinking in terms of the total work or industrial situation.

To give direction and methods for individual study efforts during and after completion of the formal seminar.

An evaluation would be made at the end of the thirteen weekly sessions to determine whether or not these objectives were met satisfactorily.

Sixteen professional men were selected as participants. All were graduate engineers, half from the Technical Department which is concerned with process engineering and half from the Engineering Department which has to do with mechanical engineering. They met from 2:30 p.m. to 6:00 p.m. every Wednesday afternoon for thirteen weeks. To provide an academic environment for the seminar, the refinery's executive dining room was used. Small tables were arranged into a large oval conference table. A blackboard and tables for role-play were also available.

Each member was provided with a course outline, study guides, a case book, nine books for selected reading, and seven selected reprints from the *Harvard Business Review*. The inter-company experience had pointed out the need to exclude top-management fundamentals while avoiding the pitfall of being too elementary, so the following topics were covered during the thirteen meetings:

1. Economics of the firm
2. Formal and informal organization
3. The management control function
4. Communication
5. Psychology of motivation
6. Special personnel problems among Technical employees
7. Current thinking about Human Relations
8. Psychology of leadership
9. Developing sub-ordinates

Eight cases from the Harvard case book by Glover and Hower[10] were worked through. Half of these were instructor-led; the other half were worked up and presented by teams of members. Individual members also presented projects and took part in role-plays. From time to time the instructor would sum up and interpret textual material, but he never gave solutions or "pat answers" to case problems.

Some Observations

At the opening sessions, it was made clear to the group that their management had insisted on complete freedom of expression for both instructor and participant. And from the very beginning the membership unburdened itself and willingly entered into both academic and case discussions, and took role-plays seriously. Though the last part of each meeting was held on personal time, in-

terest remained high throughout the period; some sessions ran overtime. Many of the men commented that they liked having the meetings held half on their time and half on company time.

As indicated above, considerable reading matter was suggested, yet group discussion of the material showed that most of this reading was being done. Particularly revealing was the initiative shown in the preparation of member-led case problems presented before this group. Descriptive charts, graphs, and other displays were used to strengthen verbal presentations.

After the eighth session of the inter-company program, a change occurred in the members' attitude toward non-technical industrial problems. They began bringing intangible as well as tangible factors to bear in working through case problems. They began asking: "What has gone wrong in this problem situation?" instead of "Who is to blame here?" Where "give us the answers" had been asked in the beginning, members now wanted to find the answers for themselves. This same change occurred with the in-plant group after the sixth session.

Evaluation

Here we run head on into the training man's bug-a-boo; how to measure the benefits of a program of this nature. Short-comings of the post-course questionnaire have been described by Andrews[8] and others; however, short of actual performance appraisal before and after a program, it is still the best yardstick we have.

A fourteen point questionnaire was presented to each participant at the conclusion of the course. Complete anonymity was assured, and frank, unbiased answers were encouraged. Five of the questions dealt with details of the program that might be improved in the future; nine dealt with the "personal aspect of the program".

The participants went into considerable detail in replying to the questions and their responses made interesting reading. Though it is impossible to give their complete answers here, the Table at the top of this page gives results of answers to nine questions that will prove illuminating.

Following are conclusions which it is believed are justified from the foregoing presentation. Maybe they will give aid to others who are faced with the task of facilitating the development of professional personnel; however, these conclusions should be limited to "training" programs for this narrowly defined professional group within industry:

QUESTIONS	RESPONSE		
	Affirmative	Neutral	Negative
1. Have you developed a greater appreciation for broadening effect of the social sciences—Economics, Sociology, and Psychology?	14	2	—
2. Has there been an improvement in your recognition of your own attitude as a key factor in your work situation?	16	—	—
3. Is there any improvement in your ability to make better observation and analysis of the non-technical phase of your work?	13	3	—
4. Did you experience any change in your understanding of the psychology of leadership?	12	2	2
5. Are you now thinking in terms of the total refinery and industrial situation more than you were previously?	9	2	5
6. Has the program helped you to understand and evaluate your past experience relating to the people with whom you work?	16	—	—
7. Do you feel that you have been provided with sources and directions to assist you in future individual development efforts?	16	—	—
8. Has the program been of practical value in improving your performance as a leader and supervisor?	14	1	1
9. What is your recommendation regarding extending this course to include other supervisors in your department? Supervisors in other departments?	16	—	—

Certainly these replies were enough to make the effort seem worthwhile. Moreover, personal interviews with the department heads of the people involved evoked the opinion that there actually has been an improvement in the attitudes and job performance of some. That members of upper-level management could detect a favorable change in such a short period of time, was indeed a unique experience for me.

1. *Where genuine understanding exists between line management, the training staff and the consulting instructor, the in-plant graduate type program can be more effective and economical than the same program when held on a college campus.*
2. *While it is popularly believed that the interchange of ideas by members of inter-company groups adds greatly to this type seminar, the problems of professional personnel were found to se so similar in each firm that little new insight was gained by an exchange of common knowledge.*
3. *Stratifying such groups by education and experience adds enough to the effectiveness of these programs to more than justify the effort.*
4. *Course content and the method of instruction should be designed to meet the needs of groups with similar educational and experience backgrounds; it is better to be too difficult than too easy.*
5. *A combination of instructional devices adds to the effectiveness of such seminars. Cases, discussions, role-plays, and projects are valuable when both imparting knowledge and changing attitudes is the objective.*

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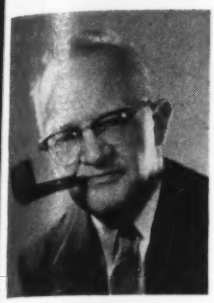
One of the major tasks of any program of management development is to bring to the surface the individual's resistances to growth and change, and help him to decide whether he really wants to undergo the difficult task of learning and changing. Unless the individual ultimately reduces his resistances and commits himself to a program of change, training will be ineffective, no matter how beautifully dressed or persuasively presented.

THE NEW LOOK AT MANAGEMENT DEVELOPMENT
by Leland P. Bradford



Recreation—A Management Tool

by August J. (Gus) Albert

Recreation Director
Sperry Gyroscope Company

MAN is more than a complex human machine. He is a dynamic organism with intense loves and hatreds. Within the span of a few seconds, his spirits can topple from the dizziest heights of joy to the most wretched depth of despair. When he is happy, his productive abilities are almost unlimited. When he is unhappy, his productive capacity is at its lowest ebb.

From this candid observation, made by Professor Jackson Anderson, it would seem that the problem of maintaining man's highest peak of productive efficiency is largely one of keeping himself happy. Employers have become concerned in recent years about the attitudes of their employees. In many companies every effort is being made to determine the needs and desires of their workers. Once these needs and desires are identified, the company takes the necessary steps to provide, wherever possible, the necessary employee services. Reports from companies following such a policy of employee relations have indicated a great deal of success.

Many factors in modern industrial society contribute to the task of creating in the mind of the worker a better attitude toward his job. As industries grow larger, relationships between employer and employee necessarily become more impersonal. In a large company, orders from the President must come down through a large number of subordinates before reaching an employee on the production line. Thus communications barriers are created.

A difficult factor is the changing nature of the job itself. No longer does the worker perform a variety of tasks during a day's work; his job has become machine-like and monotonous. In some instances the work is largely a matter of pushing buttons. Such work provides insufficient challenge for the mind, muscles, and emotions.

To afford a change of pace and an escape from boredom, more and more industries are providing activity programs for their employees.

These programs or services are called Employees Services or Personnel Services.

A sound Industrial Relations program is concerned with more than collective bargaining in contract negotiations with the organized labor unions within the company. The basic objective of this program is the development of effective communications in the plant.

Prior to the war most plants were small. Each worker knew his fellow worker and his employer personally and they came in contact many times each day. Today the situation is far different. As the companies grow larger the worker is just one of hundreds of employees. The individual tends to lose his identity, often feeling as inhuman as his machine. His mind wanders from his work to his personal problems. To make matters worse, orders must come down to him through a series of channels. Therefore, beyond his immediate supervisor, he has no personal contact with management. He feels insecure. Maybe he does not understand the management policies — this lack of understanding, due in large measure to poor communication with management, has been cited as the basic cause of the present widespread agitation between labor and management.

O. L. Allman, who wrote *Labor Relations and Employee Recreation Programs*, expresses a belief that the Recreation Department is an important part of any well-balanced Industrial Relations program. He feels that the Recreation Director is in a key position of responsibility to build and maintain morale and good relations among all employees. Since it is man-to-man contacts upon which good relations must be built, the Recreation Director has an excellent opportunity to do a real job in this respect. His many contacts with employees in various recreation activities and employee services make a real contribution to labor management.

Not A Charity Operation

A business enterprise is operated for a profit. In order to realize a fair margin of profit in a highly competitive market, most companies must analyze carefully all proposed expenditures. This is especially true in the area of Employee Services. Before approving the allocations of funds for these services, the company Board of Directors must be reasonably assured that the company will receive some benefit from this investment. Above all, there must be assurance that there is a need for such service.

In discussing the need for Employee Recreation, it is important to consider first the basic needs of man. Perhaps one of man's most basic drives is the need for activity. Man is very much like a child's top; he is a going concern as long as there is sufficient interest force to keep life spinning. The minute this drive ceases, like the top man topples over.

Growing out of man's strong thirst for

Because of the psychiatrist's knowledge and understanding of deviant behavior the public expects him to be more tolerant, pliant and stable in his relationships with others. There are always exceptions, of course, but personal understanding of oneself should produce this result. If so, then the manager who understands his own feelings, goals, attitudes and responses to stress should be expected to handle relationships with his employees in a smoother way than if he lacked such insights. Also, he should be expected to be more flexible in his personal relationships than the average employee he supervises.

PSYCHIATRY AND THE EVERYDAY WORK OF THE FOREMAN
by Addison M. Duval, M.D.

activity are several urges or desires. Each of these desires need satisfaction:

(a) Man's strong desire for recognition. He wants to stand out in the crowd. (He may achieve this by becoming a star performer on an athletic team.)

(b) Man's strong desire to create. (An employee knitting the first sweater or making a model airplane.)

(c) Man's strong desire for competition. (To measure his accomplishments against his fellow worker or neighbors.)

(d) Man's strong desire for adventure. (Longing to explore or travel. This was expressed in early days by those who discovered this country, also by boy scouts who like to explore caves in the mountainside.)

(e) Man's desire for combat. (To pit one strength and skill against another. The satisfaction of this urge is clearly seen when a shy little fellow goes to a boxing match. He will jump up, shake his fist, and yell "kill him!").

Leisure Time Increasing

In 1840 employees had little time for recreation. In 1890 employees had a little more time for outside activities. But since 1940, as work hours became shorter and leisure hours became greater, some of us began to feel that, through industrial recreation, much of this leisure time could be made useful as well as educational.

During periods of labor unrest, layoffs and loss of business, organized recreation shows its real usefulness. During such times employees' morale hits a real low. He or she does not know whether their particular job will be hit by layoff. As a result, all the employees talk about is layoffs. This is where a Recreation Director's responsibility comes in. He knows that even though a large layoff is anticipated, production must go on. He must hold their attention, give them something positive to talk about. This prevents low morale and negative thinking from seriously reducing the output of the unaffected employees.

IN OUR own case at Sperry, even though our layoffs were not too great, uneasiness grew among our people when Republic, Grumman, and Liberty announced layoffs. This became a country-wide fear that in time all companies would lay off. Our recreation staff went into action. Acting as representative for our Cosmopolitan Club, we made arrangements to charter the *Ocean Monarch*, which holds 420 people, for a twelve-day vacation cruise to the Caribbean. We arranged for 500 tickets for *Around the World in 80 Days*, with dinner at the Taft Hotel and transportation by bus there and back from our plant, along wih several other activities such as starting a new Ballroom Dance Class, and driving for new bowling leagues. We received over 80 registrations with deposits for the 12-day cruise, and everyone started talking about vacations instead of layoffs. All seats were sold for the theatre party. Over 150 joined the new Dance Class, and our Bowling went from 17 leagues to 24 leagues, involving over 2,000 people in that sport alone. We like to feel that, through recreation, we helped to keep our people calm and productive.

The Employee Recreation Program is an important factor in helping the new employee adjust himself to work. Through participation in recreational activities, he makes friends with other employees who have similar interests. His attitude toward the company improves. His feeling of isolation disappears. He now has the feeling that he is a member of the team.

Recreation may serve an individual in many ways. An employee tends to choose activity not realized in his daily work. The office worker prefers outdoor activities of a physical nature such as hiking, golfing, hunting, tennis, swimming, or bowling. On the other hand, the shop worker who engaged in heavy muscular exercise on the job, will often choose an activity which does not require too much exertion.

A broad recreation program thus relieves frustration by giving the worker an outlet from his pent up emotional drives. The employee who cannot satisfy his basic emotional desires because of the monotonous nature of his job, gets satisfaction by participating in recreational activities. Without this satisfaction the worker is unhappy and unable to do justice to his job.

Recreation activities provide a laboratory for training and recruitment of leaders. A well organized recreation program will delegate responsibility to volunteer group leaders or team captains. The alert recreation director is training future leadership for his company.

Through recreation, absenteeism is reduced. An employee often wakes up in the morning not feeling too chipper; his first reaction may be to stay at home. If he suddenly remembers that tonight he must bowl or play golf, or softball or participate in some other activity, needless to say, he comes to work.

Recreation—A Sales Tool

Recreation is used in other ways. For example: You may be in negotiations for big contracts, sometimes with the government and sometimes with commercial establishments. After making contact with the buyers, you will take them golfing, to a show and dinner, to a Country Club, maybe spend a weekend hunting or fishing. This is with no other intent than to put him in a pleasant mood to listen to your sales talk. When contracts are signed, recreation is then forgotten and never receives any part of the credit.

Corporate recruiters go to the various colleges looking for engineers and during their interviews tell the prospective employee of his company's recreation program. Often it is the well organized recreation program that sways an engineer to that company.

Recreation—The Sperry Approach

At Sperry we have an Employee Industrial Recreation Association comprised of thirty clubs. We have activities for the young as well as for those who cannot participate in active programs. We have theatre parties, night ball games, and exhibitions. Over 14,000 employees participate in one or more of our various programs. Last year, in

All Business Is Teaching

by H. W. Prentis, Jr.,

Chairman of the Board
Armstrong Cork Company

EFFICIENT management is founded on principles and is constantly dealing with principles: creating them to guide the business, explaining them to an organization that will carry them out, and then making certain that in the execution they are understood and adhered to.

Most of these principles remain constant as business advances from decade to decade, from one generation to the next.

One of these fundamental principles that make a good business executive is that he must be ever mindful of the fact that he lives in a glass house—that others watch him, note the subtleties in his manner and approach, and through them take their own cue for action and behavior. A good executive will decide what manner of man secures the best results for him and his organization and try to lead that life as an example for others to follow.

If hard work is what he expects, then he himself should be willing to put in the necessary extra hours. If he expects honesty and integrity, he should never compromise the truth to the slightest degree. If he expects patience, consideration and cooperation, these qualities he must strive to include in his own conduct and demeanor. If he expects his subordinates always to do the best that is in them, he himself must also have a passion for excellence—excellence for its own sake.

But it is not enough for the younger members of an organization to acquire skill and character by emulation; by the slow process of absorption. Competent men aren't born that way, and they don't just acquire their skill. They are trained.

And this brings me to perhaps the most important characteristic of an executive, and perhaps the most important contribution that an executive can make to a business organization: the development and training of young men to carry on and expand what the executive himself and others have devoted a lifetime to establish.

Of the four elements composing any business—money, materials, machinery and men—none is so important as men. It is men who think, who guide, who act and who develop and perpetuate a business.

A machine has a rated capacity beyond which it cannot possibly go. But a man—even one with only limited abilities—can far outstrip his rated capacity with the proper help, training and inspiration. A building can store or house just so much and no more. A man, with the will to do so, never stops absorbing more, and unlike a building, he can pass on to others the contents of his mind without depreciating his own inventory. In fact, sharing his knowledge can enhance it.

Money is only the tool a man works with or the yardstick by which we measure his skill. In itself it contributes nothing, and is a lot easier to come by than a man with the skill to use it properly.

These things the good executive knows, and because he does he will devote more of his time to the training, development and management of his men than he will to the care, the handling and the management of his machinery, his buildings and his money.

I have long held that all business is teaching—teaching people how to make goods is manufacturing; teaching others the benefits of a product is selling; teaching people the worthiness of a business is public relations; and teaching employees how to work together is management. ■

the last three weeks of July, including our vacation period, over 6,000 took part in our activities.

Among our various employee service programs, we do such services as obtaining theatre tickets for New York shows, ball games, football games, Motor Boat Show tickets. We distribute income tax forms, and license blanks for auto registration. We also secure the license plates. Over 4,000 plates were distributed through our office so far this year.

A Sports Night is held each year to honor all our champions and those who helped to make it a success.

The cost of our program is around $1.60 per employee per year.

Recreation improves the physical health and mental stability of employees. It contributes to better relations between employees and management. It develops leadership and thus aids in the discovery of new foremen and supervisory personnel.

A good recreation program attracts a better class of workers to the plant. Recreation builds and secures good will of the community. Recreation improves worker morale, helps increase production efficiency and reduces absenteeism. Recreation builds self-reliance and creates cooperation.

Thus we feel that, through recreation, we supply an asset to the company—an income producing asset, an intangible asset on your balance sheet. ■

Management Must Manage The Informal Groups Too

by John T. Doutt, Ph. D
Assistant Professor of Industrial Management
University of Colorado

MANAGEMENT must manage. This simple statement, unuttered a generation ago, has become a gospel, a principle, a final argument to end all argument for the new generation of managers. Yet the note of complaint or defensiveness that is all too often apparent when the statement is made would seem to belie the certainty that management is really being effective in getting things done through people.

Much of this can be traced to the fact that people have changed, worker attitudes have changed, but management approaches have not. It is suggested here that part of the reason for this failure to keep pace is because of the limited understanding of informal activities that go on within the organization.

Since the days of the Hawthorne experiments of the Western Electric Company, considerable has been written on the nature and characteristics of these informal activities but comparatively little attention has been given to their implications to those charged with management responsibility. It has been assumed that if the structure of these various group systems was adequately explained, management would somehow conduct itself effectively within these generally drawn relationships.

The purpose here is to examine the patterns of behavior that commonly develop in the industrial organization with the intent of answering these questions:

- *What are the chief forms of deviation from established patterns that people at work most commonly develop?*
- *Why do these various forms evolve the way they do?*
- *How shall management regard these activities, and what action is suggested?*

The Nature of the Informal Structures

It is common knowledge that formalized organization charts or systematically drawn procedures manuals seldom describe what is actually going on in the factory. Workers at the bench often find various ways of expediting their work assignment, thus giving rise to the cliche: the *right* way and the *company* way. Again, they find mutually acceptable personal relationships that are worked out among them, but are never recorded in any formalized way, either by themselves or by management. Yet the existence of these structures will, on occasion, determine the measure of success that a given program or innovation will achieve.

Short Cuts at the Bench

It is not difficult to identify the causes for the first of the deviations mentioned above; the short cuts and procedures that are worked out by the bench worker, and quite often for his own exclusive use. In a dynamic economy with quickly changing products and processes, it is unlikely that methods engineers can work out a system or procedure free of "bugs" in a short period of time. Hence, the worker himself will sometimes be forced to devise new and better ways of attaining the goal set for him.

In other cases, his natural resource will aid him in inventing ways of getting the job done more easily and more quickly than the methods engineer had anticipated. The far-too-common result is that the worker keeps this information to himself, for use by himself and his "accepted" co-workers.

The more relevant question here is why and how the bench man keeps the nature of these "short-cuts" from management. When confronted with the practice, management expresses a variety of emotions ranging from bafflement to irritation. And it is encouraging to note that they have not been without some proposed solutions, including the "reinstatement" of the foreman, bigger and better suggestion box programs, and the now current work simplification programs which combine the talents of the engineer with the resource of the bench man.

Are There New Solutions?

It is no longer novel or sophisticated to say that the basic solution of this problem lies more within the realm of management than it does within that of the worker, plain as this truth may be. Management now seeks devices and gimmicks that will provide the rapport and atmosphere that will minimize the communication barriers now so deeply entrenched in some situations.

New prescriptions vary, but through them runs a thread of similarity. The beginning must surely lie with a realization that the objectives of management and labor are not in complete harmony,

especially when it comes to the allocation of the fruits of the worker's labor. A clear perspective here leads to a realistic approach to the barriers in communication. There will *always* be some friction, some distrust, and some withheld information.

But a careful soul-searching on the part of management will often ferret out statements, attitudes, and activities in the past that might have been misunderstood by the bench worker. The next step here may well require some back-tracking in a spirit of righting a wrong long past. In other cases, an overt act on the part of management indicating a clear desire to be as forthright as is practicable will bear fruits. In either instance, the solution begins with a careful analysis of the historical aspects of the situation and ends with a visible and accepted act that will establish a spirit of communication. This act may take the form of a concession or it may be nothing more than oral discussion about a common problem of the moment.

In recent years, with the emphasis on group dynamics, it appears to us that there has been an inordinate stress on group action as the best way to get desired results. Consequently, there is evidence that more and more organization structures are favoring committee action, and group action generally, as the means of getting desired action. The "results" approach takes a rather dim view of this. Too frequently, such committees or groups tend to relieve men of accountability for the results assigned to them. These group arrangements often permit an individual to bring his personal problems to one or more other people for review and consideration. Then, if something goes wrong in his area of responsibility as a result of a decision backed up by the group, he feels he is somewhat relieved of personal accountability for results. There usually follows a flood of explanatory reports to "everyone". As a rule-of-thumb we suggest that whenever you find there are many reports circulating to "inform", there usually is at the root of these reports a lessening of personal accountability for expected results.

THE "RESULTS" APPROACH TO ORGANIZATION
by Edward C. Schleh

Group Relationships—Formal And Otherwise

The second of these uncharted activities, informal group relationships, has been the object of study by industrial sociologists for some time now, and some meaningful descriptions as to the nature of these groups is now available[1]. Some of the wellsprings of these groups have been spelled out: personal affinity, geographical proximity, assigned work relationships, lodge and church, or nationality, to mention but a few of the more readily identified threads in the fabric.

Perhaps less obvious foundations of the informal group are the services they provide for their members. Some of these have considerable portent to those charged with getting things done through people. The following five areas describe some of the chief aspects of these foundations:

1. From the viewpoint of the worker, one of the most important functions of the informal group is the integrity and dignity that is assured him[2]. In a group of several thousand employees (or even several hundred employees), it is unlikely that he will have much of a feeling of being a part of the team or a recognized functionary as far as management is concerned. Where, then, can he find some assurance that he as an individual is an important part of the industrial complex in which he finds himself? Out of this feeling of vastness, he has come to realize himself as an individual in the small informal group around his machine or work station.

2. No less important to both worker and those charged with the accountability for his actions is the fact that new ideas — innovation at the bench level — find their most critical moments in their life span in the acceptance or rejection by the informal group[3]. A sign of disapproval on the part of the informal leader and a novel idea dies a-borning. Less apparent but equally true is the probability that a scowl of disapproval on the part of the foreman means virtually nothing if the informal group gives support to a fellow-member struggling with an idea he has just put forth. The innovation will go forward.

3. As a vehicle of communication and gossip, the informal group is without rival. Whether the group ought to act in this capacity is an irrelevant question. It does communicate and will continue to do so with or without management approval. Management's effective use of this facet of group behavior is not so much dependent on control measures as it is on understanding the nature of communication that goes on here[4].

4. If the factory was purely a business organization with the sole aim of making products at a profit, there would be no occasion for social intercourse, theoretically speaking. That the singular objectives suggested here are indeed exclusive is no longer current thinking[5]. And it is held by some that the existence of social intercourse actually increases productivity, other factors being equal. Thus a fourth function of the informal group is to give the day meaning as far as the worker is concerned. To make another 500 holes in another 500 steel frames is a rather mundane and pedestrian undertaking. But to view the day in terms of the discussion that will take place, the practical jokes that will be worked out, and the minor games that will be enjoyed in the work process, is to give the work assignment a whole new dimension.

5. A further function of the informal group has to do with the enforcement of conduct[5]. Perhaps one of the most obvious points of evidence here is to be

[1] *One of the pioneering efforts in this area (and still one of the best) is the work of F. J. Roethlisberger and W. J. Dickson entitled,* Management and the Worker (*Cambridge: Harvard University Press,* 1939).

[2] *This point is made by Chester I. Barnard,* The Functions of the Executive (*Cambridge: Harvard University Press,* 1951).

[3] *Some aspects of this problem are developed by Robert Dubin in* The World of Work (*Englewood Cliffs, N. J.: Prentice-Hall,* 1958). *See the discussion under "Group Life of Organizations" (Ch. 6) and also "Work Groups and Work" (Ch. 16).*

[4] *Development of this idea can be found in H. A. Simon,* Administrative Behavior (*New York: The Macmillan Company,* 1947).

[5] *A penetrating study of this characteristic is to be found in A. W. Gouldner,* Patterns of Industrial Bureaucracy (*Glencoe: The Free Press,* 1954).

found in the dress that is customarily worn by men in a given area or type of work. Minor deviations are tolerated only as long as they do not violate the group ideas. The group is equally effective in enforcing ideas about the kind of work it will do, how much it will do, or when it will work, the amount of horseplay that is within bounds and the extremity of gossip that will be tolerated. While management tends to deplore some of these group enforcements, it should be apparent that it is the existence of these conduct patterns that enables management to count on a degree of "law and order" in the shop and provides assurance that assigned tasks will be carried out.

What does this new approach to marketing amount to? The first and perhaps key point is that marketing operations should begin, as well as end, with the customer. All marketing activities should reflect his needs and wants. In today's market, the customer is king. This results in a basic change in emphasis for a firm, from selling what it makes to making what will sell.

To implement this point of view, the entire operations of a company must be customer oriented. The consumer is not one to whom a product can be sold, but someone for whom a product is designed to best serve his needs, and made available to him in the way that is most convenient and economical for him. To accomplish this, marketing considerations must encompass the entire business. Marketing and production are carried out on a coordinated basis.

SCIENTIFIC MANAGEMENT OF MARKETING OPERATIONS
by Al N. Seares

The Implications to Management

The unravelling and identification of these group behavior patterns has implications to management which can be accepted or rejected, but not ignored. Nor will it do, having accepted some of the implications, to set about destroying the informal group with the hope that the implications will then disappear. Having singled out the informal leader, there are sometimes temptations to seek ways of removing him from his group with the hope that they will then disintegrate, thus solving the problem that the leader was currently voicing. It is more likely that management, having driven one "evil spirit" from the house will find that four more, each more evil than the first, have taken up habitation in the vacuum that management has inadvertently created. In some cases, it has been observed that loyalty to the group is far stronger than loyalty to the formal chief, the department, or the company, and breaking up the group lowers morale and production levels may actually decline.

A CLEAR understanding of objections the group is currently expressing may once again require that management look to itself objectively and dispassionately. It may be that the present grievance is really quite minor, but the group has become hostile and distrustful over another issue in times long gone which was not settled to their satisfaction.

It may well be that the decision that was made on this now historical issue was inevitable in view of the on-goingness of the concern. It is suggested here that the hostilities generated at that time might be owing to the ineptness in explaining the issues and the "inevitable" conclusion, in the view of management. Again, the problem may not be so much the withholding of management thinking from the group as it is the way in which the problem was explained to the group. A quick dismissal of a complex issue can give the group the impression that management is arbitrary and insensitive to group values, thus confirming their worst suspicions of those who manage.

Tracing still another of the implications to management, it is sometimes observed that the existence of an effective informal group can actually increase production and management awkwardly attempts to form or create a social fabric within their plant. The personnel officer will undertake the organizing of bowling teams and baseball leagues, not realizing that these extra-curricular activities are manifestations of group congeniality, and not causes thereof. The task of management, then, is to create a permissive atmosphere in which such groups may indeed jell and come to fruition. Primarily, this means the establishment of stable conditions — the leveling of production, the assignment of specific crews or individual men to the same task day after day, the establishment of uniform work periods, the systematic description of job tasks, to mention but a few of the things that might be done.

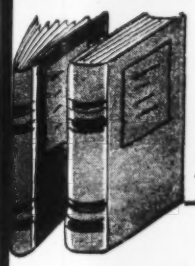
The implication to management of the communication and gossip aspects of the informal group should be quite clear. If they are not to witness the undoing of the best intentioned moves, they must furnish accurate and meaningful information about company plans through formalized communication channels. Not only will this provide the information the worker seeks, but it will undermine the informal group as a reliable source of news, thus discrediting the exaggerations that are inevitable in an irresponsible communication device.

Finally, management might consider the idea of approaching the workers as groups rather than as individuals. How many times has the worker been solicited as an individual on a question such as the unreasonableness of striking against the company or joining a union, giving the management a positive answer, only to be negated within a matter of hours or days[7]. It would appear that the worker did not mean what he said, and to upbraid him at this point, while an entirely human reaction, would be a useless activity.

Management Must Manage

The issue is this: if the group does accept or reject ideas, if the group does enforce patterns of behavior, if the group does decide on what is or is not an acceptable work assignment or work quota, then the group and its sanctions become one of the focal points of the management approach. There is, of course, a certain hazard of approaching a "united front" of bench workers, complete with formal and informal leaders, group attitudes, and group sanctions. Over against this must be set the hope that the group will discuss the ideas and problems set forth and will state objections openly which management can counter directly and with some certainty of group compliance, once the idea is accepted.

In summary, this much can be stated: If management will study the foundations of the informal structures that exist within their plant and if they will see these foundations as realities to the bench worker, attitudes will change and common objectives can be worked out. Management will indeed then be managing. ■



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Boston Univ. 121
St. Norbert Col. 118
Sacramento State College 116
Univ. of Okla. 111
Indiana Univ. 110
Wilkes College 110
Univ. of Houston 107
Northeastern Univ. 106
San Diego State College 103
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Drexel Institute of Technology 100
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Fordham Univ. 89
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McGill Univ. 11
Oregon State Col.....11
Antioch College 8
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Indiana Central Col. 2
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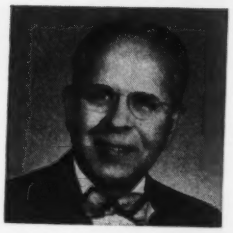


University Division Observations

by Professor Harold Fischer

Vice President,
University Chapter Division

DURING the second semester of the current academic year, 27 University Chapters received membership awards "in recognition of their achievement in advancing the art and science of management and of their contribution to the growth of the Society through their significant increase in membership."

On April 1, 1959, *Georgia Institute of Technology* led the entire Division with a membership of 250 while *Pennsylvania State University* was second with their membership of 161.

In percentage increase, April 1, 1958-April 1, 1959, *Wilkes College* was the outstanding leader with 547%, followed by the *University of Bridgeport* with their commendable 387% increase.

On absolute membership increase, April 1, 1958-April 1, 1959, the leading chapters finished in the following order: *Georgia Institute of Technology*—95; *Wilkes College*—93; *Pennsylvania State University*—73; and the *University of Bridgeport*—60. Since these chapters won Hamilton Watch Awards in recognition of total membership and percentage increase (one watch awarded per chapter), Hamilton watches were awarded to the *University of Baltimore* with their increase of 49 members and to *Sacramento State College* with 48.

The University Division continues to grow. In addition to the 8 chapters previously chartered during the first semester, the following new chapters were inaugurated recently: *Clark University, Long Island University-Brooklyn Center, Quinnipiac College, Rutgers College of South Jersey, University of Nevada* and *West Texas State College*. We extend a sincere welcome to all—it is a privilege to add these fine schools to our ever-growing family of University Chapters.

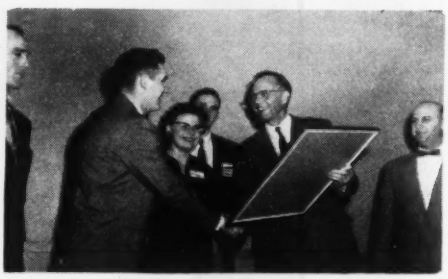
As of April 1, 1959, 151 chapters were serving over 10,000 members in management education.

CHAPTER PERFORMANCE AWARDS STANDINGS

April 1, 1959

Babson Institute 4260
Boston Univ. 4065
Loyola Univ. of Chicago 3910
Rider College 3845
Georgia Institute of Technology 3840
Ohio Univ. 3800
American Univ. 3760
Univ. of Pitt. 3740
Univ. of Conn. 3640
LaSalle College—Evening Div. 3600
Sacramento State College 3600
Villa Madonna College 3570
Franklin and Marshall Col. 3555
Boston College 3525
Univ. of Wisconsin—Milwaukee 3465
New York Univ.—Sch. Commerce—Day Div. 3455
Univ. of Kansas 3445
Univ. of Tenn. 3430
Univ. of Illinois.....3390
Univ. of Houston....3385
Alabama Polytechnic Institute 3255
Mississippi State University 3230
George Washington University 3130
Clarkson College of Technology 3105
Temple University—Evening Div. 3090
Univ. of Minn. 2985
Indiana Univ. 2840
Roosevelt Univ. 2825
Univ. of N. Dak.....2615
Univ. of Omaha 2575
San Diego State College 2520
Univ. of Arkansas..2510
Univ. of Miss. 2510
Miami Univ. 2420
Univ. of Michigan..2410
San Jose State College 2385
Univ. of Missouri....2385
Ohio State Univ.....2375
Villanova Univ. 2360
University of Bridgeport 2355
Syracuse Univ. 2185
Kansas State Col...2180
Los Angeles State College 2160
Univ. of Maryland..2135
Univ. of Okla. 2115
Univ. of Wisc.—Madison 2050
Univ. of Penn. 2030
Duquesne Univ. 1995
Santa Maria Catholic Univ. of P. R. 1980
Univ. of Florida 1880
Western Carolina College 1875
DePaul Univ. 1785
Univ. of Alabama..1780
Clemson College....1775
Penn. Military College 1775
Penn. State Univ. ..1775
Univ. of California—Berkeley **1725
Univ. of Detroit 1715
Tennessee Polytechnic Institute 1610
†Kent State University **1605
Wilkes College....**1575
Bowling Green State University 1515
†St. Norbert Col. ..1450
Drexel Institute of Technology **1400
Guilford College.. 1395
†Rutgers College of South Jersey *1190
Wayne State University **950
Univ. of Rich. 940
Washington State College **930
Univ. of R. I. 915
Rutgers Univ.— New Brunswick **795
Western Michigan University **775
Fenn College *760
Memphis State Univ. *730
Temple University—Day Division **700
Univ. of Baltimore..*670
Rensselaer Polytechnic Institute *665
Loyola College of Montreal *605
St. Peter's School of Business *540
Seton Hall Univ. *505
C. W. Post Col. of Long Island U....*470
Butler Univ. *460
Cornell Univ. *450
University of Chattanooga *430
St. John's Univ. *425
North Texas State College *360
Georgetown Univ. *295

* One report submitted
** Two reports
† Chartered this year submitted



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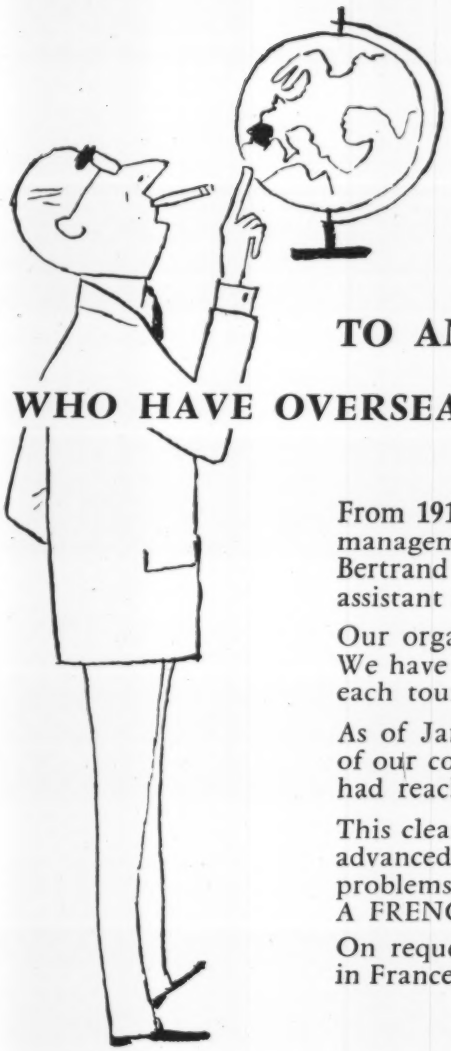
Left to right: Leslie W. Miller, Vice President; Charles D. Harold, President; Hildegard H. Roedig, Secretary; Gary L. Pence, Treasurer; Professor Edward G. Brown, representing College of Business Administration; and Professor Richard A. Johnson, Faculty Advisor.

The caption below covers the picture on the opposite page. →

CHARTER PRESENTATION TO KENT STATE UNIVERSITY CHAPTER FEBRUARY 19, 1959

Left to right: Mayor Leo Berg of Akron; Fred Harrell, National Treasurer S.A.M; Bill Yurkowsky, Cleveland Chapter; Dr. J. N. Berrettoni, Vice President Student Activities Cleveland Chapter; Professor Harold Fischer, Vice President University Division S.A.M; Dean Stanley Vance of College of Business Administration; Dr. Raymond Ziegler, faculty advisor; Ray Riley, Walt Fanz, Ron Davis, and Ernie Darlak, student officers.



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